

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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No. 2418.—VOL. LI.

LONDON, SATURDAY, DECEMBER 24, 1881.

[WITH SUPPLEMENT.] PRICE SIXPENCE
PER ANNUM, BY POST £1 4s

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER.
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.
Business negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded on application), containing closing prices of the week.

MINES INSPECTED.
BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUUSTELL.

SPECIAL DEALINGS in the following, or part:—
50 Almada, 6s. 3d.
60 Bwch United, 22s.
50 Carnarvon Cop., 13s.
50 Callao Bis, 16s.
10 Devon Con., 27½.
50 Devon Friend., 17s 6
75 East Blue Hills, 15s.
25 East Caradon, 12s.
25 East Chiverton, 21½.
25 East Lovell, 23 5s.
20 E. Roman Grav., 16s
30 East Van, 15s. 3d.
40 Frontino, 23 2s. 6d.
25 Glenrock, 21 5s.
50 Glenroav, 9s. 9d.
50 Gold Coast, 30s.
30 Grogwinton, 30s.
30 Gt. So. Mysore, 12s.
40 Hington Down, 21 7 6
100 P. of Wales, 19s. 6d.
50 Pestarena, 5s. 9d.
25 Ruby, 22½.
10 Richmond, 21½.
15 Roman Gravels.
20 So. Devon, 21 10s.
50 S. Indian Gold, 21 7 6
10 S. Condurow, 21.
40 So. Darren, 21 8s. 9d.
25 S. E. Wynaad, 21½.
50 S. Penstruthal, 11s 3d
75 Santa Barbara, 23s
25 Tanker. Gt. Con., 10s.
50 United Van Con., 13s.
30 West Phoenix, 21s 2s 6
50 West Caradon, 15s.
20 Wheel Crebor, 24.
10 West Kitty.

SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

SPECIAL BUSINESS at CLOSE PRICES in all Market TIN, COPPER, and LEAD SHARES.

BRATSBURG COPPER.
DEVON FRIENDSHIP.
EAST BLUE HILLS.
SPECIAL BUSINESS in the above, which are recommended for an early rise.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

INDIAN GOLD MINES.—SPECIAL BUSINESS in:—
Cootacivil. Indian Kingdon. Rhodes Reef.
Devala Moyer. Indian Trevelyan. South-East Wynaad.
Devala Central. Mysore. South Indian Gold.
Great Southern Mysore. Mysore Reefs. Tambracherry.
Indian Glenrock. Ooregum. Wynaad Perseverancee.
Indian Phoenix. Organo.
At CLOSE MARKET PRICES, free of commission.
Reliable information given on any of the above. A daily price list issued giving closing quotations. SPECIAL BUSINESS in Frontino and Bolivia Potosi, Ruby, Nouveau Monde, and Richmond.
SHARES IN THE ABOVE INDIAN OR OTHER GOLD AND SILVER MINES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS.—FOREIGN BONDS.—SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

AMERICAN AND CANADIAN STOCKS AND SHARES.—SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS, TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.
Accounts opened for the Fortnightly Settlement
A List of Investments free on application.

Mr. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
70 Almada, 6s. 6d.
50 Ankankoo, 11s. 6d.
25 Arendal, 22½.
40 Bratsberg, 37s. 6d.
100 Bedford United, 34s.
50 Callao Bis, 14s. 6d.
40 Carnarvon, 17s. 6d.
30 Cape Copper, 12s.
50 Colorado, 22 1s. 6d.
20 Carr Bros.
50 Drake Walls, 16s.
10 Don Pedro, 10s. 6d.
2 Dolcoath.
5 Derwent, 28s. 6d.
5 Dev. Friendship, 17s
5 Devon Consols, 27½.
5 Devala-Moyar, 25s.
5 East Caradon, 12s.
50 E. Roman Gravels.
40 East Blue Hills, 16s.
50 Eberhardt, 13s. 6d.
25 Frontino.
100 Goodevere, 22s. 6d.
50 Gold Coast, 31s.
40 Hington Down, 25s.
100 Indian Glenrock, 25s.
30 Killifreth, 34s. 6d.
100 La Plata, 42s. 6d.
50 Marke Valley, 27s. 6d.
25 New Quebrada, 25s.
70 Nouv. Monde, 11s. 3d.
100 North Herodsfoot, 7s. 6d.
50 Okel Tor.
25 Plumas Eureka, 22½.
60 Parys Copper, 20s.
150 Port Phillip, 5s. 6d.
75 Potosi, 13s. 6d.
50 Pen-yr-Orsedd, 20s.
15 Richmond, 21½.
25 Ruby, 22½.
10 Roman Gravels, 21½
70 South Indian, 26s.
50 South Devon, 31s.
10 So. Condurow, 21½
100 Tankerville, 10s. 9d.
5 Van, 28½.
5 West Crebor, 9s.
40 West Phoenix, 19s. 6d.
10 West Kitty.
50 Wheel Boys, 22 2s.
25 Wheel Jewell, 12s.
10 Wh. Greenville.
20 W. Godolphin, 22½.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.
Mr. Bumpus devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

IMPORTANT TO INVESTORS.—Shares in SOUND DIVIDEND and PROGRESSIVE MINES (particularly TIN and COPPER) should be bought at present prices, as many of them are likely to have a considerable rise before long. Those who have followed my advice during the past few months can now realize good profits, and there is every probability that much higher prices will be reached early in the coming year.

The following are particularly recommended:—
WEST KITT. WEST GODOLPHIN.
WHEAL GRENVILLE. WHEAL BOYS.
WEST PEEVOR. DEVON FRIENDSHIP.

WILLIAM HENRY BUMPUS, SWORN BROKER.
OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

MR. GEORGE BUDGE, STOCK AND SHARE DEALER
9, GRACECHURCH STREET, LONDON, E.C. (Established 28 years).
ALL BUSINESS TRANSACTIONS OF ANY CHARGE FOR COMMISSION.

Office to Investors and Speculators. Mr. BUDGE has DEALINGS in:—
Arendal. 30 Goodevere. 75 Parys Copper.
Bedford United. 25 Goginan. 150 Pestarena.
Bratsberg. 100 Hoover Hill. 55 South Indian.
Callao Bis. 25 Hington Down. 30 South Devon.
Carr Bros. 50 Indian Phoenix. 50 South Penstruthal.
Derwent. 100 Javali. 35 South Tolcarne.
Don Pedro. 20 Kit Hill. 100 Tolima.
Dolcoath. 100 Kapanga. 10 West Kitty.
East Chiverton. 20 Lead Hills. 50 West Polbreem.
East Blue Hill. 20 Langford. 100 West Caradon.
East Caradon. 20 New West Caradon. 40 West Godolphin.
Frontino. 50 New Kitty. 75 West Crebor.
Gawton. 30 Okel Tor. 20 West Phoenix.
Henyoy. 50 Penhalls. 65 Wheel Jewell.
Gold Coast. 100 Prince of Wales. 20 Wheel Uny.

SPECIAL BUSINESS in West Polbreem, Wheel Agar, West Kitty, Penhalls, Kitty, Parys Copper, Goginan, Dolcoath, Gawton, and East Blue Hills.

BRITISH AND FOREIGN MINING OFFICES.

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.'S
BRITISH AND FOREIGN MONTHLY MINING NEWS
—STOCK AND SHARE INVESTMENT NOTES—MINES,
MINERALS, AND METAL MARKETS—SHARE LIST,
No. 837, Vol. XVI, for DECEMBER month, will be ready
next week, and will be sent to customers on application.

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MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS, E.C.

NOTICE OF REMOVAL.

MR. ALFRED E. COOKE begs to announce that in consequence
of the Offices at 76, Old Broad-street, which he has occupied for over
15 years, being required for the enlargement of the Stock Exchange, he has
REMOVED to—
No. 9, OLD BROAD STREET.
(NEARLY OPPOSITE.)

MR. ALFRED E. COOKE,
DEALER IN BRITISH AND FOREIGN STOCKS AND SHARES
OF EVERY DESCRIPTION.
9, OLD BROAD STREET, LONDON.
ESTABLISHED 1853.

THE INVESTORS' GAZETTE.
Should be read by all INVESTORS. Will be forwarded on application.
MR. ALFRED E. COOKE can sell the following shares:—
30 Arendal. 100 Herodsfoot. 30 Pioneer.
30 Bratsberg. 90 Indian Glenrock. 75 Parys.
50 Bwch United. 45 Indian Trevelyan. 100 Quartz Hill.
40 Bedford United. 50 Killifreth. 20 Ruby.
60 Carnarvon Copper. 50 Kapanga. 10 Richmond.
100 Callao Bis. 25 Langford. 10 Roman Gravels.
100 Devon Friendship. 50 Leadhills. 60 Sortridge.
5 Devon Consols. 20 Moria Du. 30 Tankerville.
120 East Blue Hills. 25 Mona Consols. 25 Van and Glyn.
20 East Chiverton. 10 Mona. 20 West Caradon.
10 East Lovell. 20 New Kitty. 40 Wheel Crebor.
30 Frontino. 20 Nouveau Monde. 10 West Kitty.
100 Gt. Southern Mysore. 80 New West Caradon. 5 West Preevor.
23 Gunnislake (Clitters). 80 Polrose. 10 West Polbreem.
100 Gawton. 35 Port Phillip. 50 Wheel Jane.
20 Hington Down. 250 Potosi. 100 West Crebor.
100 Prince of Wales.

Offers may be made on lowest market price FREE OF COMMISSION will be
taken for ALL or ANY PORTION of the above shares.
Settlement either for CASH, FORTNIGHTLY ACCOUNT, MID. JANUARY
ACCOUNT, or for FORWARD DELIVERY in TWO or THREE MONTHS on
payment of 20 per cent. deposit.

N.B.—The present is a most favourable time to purchase shares in ESTABLISHED TIN and COPPER MINES at cheap prices.
Mr. Alfred E. Cooke is buyer of shares in all the LEADING MINES at current market price.

THE NEW YEAR.
Investors should send for the INVESTORS' GAZETTE, to be published NEXT
FRIDAY.

TELEGRAMS and LETTERS receive immediate attention. All shares currently
dealt in, bought and sold, free of commission.

ALFRED E. COOKE, 9, OLD BROAD STREET, LONDON.
(Opposite the Stock Exchange, with which the offices are in DIRECT
TELEGRAPHIC COMMUNICATION.)

STOCKS AND SHARES,
FOREIGN BONDS, TELEGRAPHS, TRAMWAYS, RAILWAYS, AND
OTHER LEADING SECURITIES.

MR. JAMES STOCKER, STOCKBROKER,
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Special Business at close prices in all British, Colonial, and Foreign Mine
Shares.
BANKERS: LONDON AND WESTMINSTER.

A B B O T T AND CO.,
STOCK AND SHARE BROKERS,
9, CORNHILL, LONDON, E.C.

MR. WILLIAM GABBOTT, STOCK AND SHARE DEALER,
262, GRESHAM HOUSE, LONDON, E.C.
ESTABLISHED 1877.

THE COMING GOLD FIELDS—THE GOLD COAST COLONY.
Mr. WILLIAM GABBOTT has business in the following:—
EFFUENTA—GOLD COAST. AKANKOO—GUINEA COAST GOLD

MESSRS. ENDEAN AND CO., STOCK AND SHARE
DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.
ESTABLISHED 1861.
Bankers: London and Westminster, Lothbury, E.C.

JOHN B. REYNOLDS, STOCK AND SHARE DEALER,
37, WALBROOK, LONDON, E.C.
ESTABLISHED 25 YEARS.
BANKERS: LONDON JOINT-STOCK.

Mr. REYNOLDS recommends the purchase of shares in the following Mines,
viz.:— WEST KITT. WEST POLBREEM. NEW KITT.

And other Mines in the St. Agnes district are worth notice.
Mr. Reynolds has gained his information upon which great reliance can be
placed at considerable expense. Correspondents who are strangers to him,
therefore, wishing for his guidance in Mining matters must accompany their
applications with a fee of 21s.

Mr. Reynolds does business in all descriptions of mining and other stocks and
shares at net prices, and in the event of business resulting from his information
he allows the 21s. fee on purchase-money or otherwise.

Mr. Reynolds refers his readers to his article on page 1585.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C. (Established 28 Years).
Can sell the following SHARES at prices annexed:—
70 Almada, 6s. 6d.
40 Bedford Unit., 33s 9d
25 Colorado, 22 2s. 6d.
75 Chontales, 3s. 6d.
50 Dev. Friendship, 15s.
40 Don Pedro Gold, 10s 6
50 Devala Moyer, 21 6 3
20 Eberhardt, 15s.
30 East Blue Hills, 15s 6
100 Exchequer 3s. 9d.
20 Gunnislake (Clitters).
50 Gold Coast, 30s. 6d.
50 Hington, 25s.
40 Herodsfoot, 8s. 9d.
40 Indian Glen., 26s. 3d.
40 Indian Phoenix, 16s. 3
100 I.X.L., 3s. 9d.
100 Pestarena, 5s. 6d.
75 Kapanga, 12s. 9d.
25 Kit Hill, 16s. 3d.
50 La Plata, 42s. 6d.
40 Langford Silver and
Copper, 12s. 6d.
20 Last Chance, 15s. 9d.
25 Marke Valley, 25s. 6d.
50 Mysore Gold, 25s.
25 Miners, 28½.
50 Nouveau Monde, 10s 6
50 N. Trumpet Con.
40 N. W. Caradon, 10s.
20 New Kitty, 21s. 3d.
25 North Herodsfoot, 5s 3
50 P. of Wales, 20s. 6d.
50 Port Phillip, 5s. 3d.
50 Parys Corporn., 19s. 8
50 Potosi, 13s. 6d.

100 Potosi, 13s.
100 Bodidris (21 paid), 6s. 6d.
50 GREAT POLGOOTH UNITED (21 paid), at 9s. 6d. per share.
90 TAMAR SILVER-LEAD (21 paid), 17s. per share.
NOTE.—Shares in any of the above can be secured for payment end of January,
1882, on payment of 20 per cent. cash.

MR. JOHN L. M. FRASER,
(13 Years' Experience at the Great Miners and other Mines.)
CONSULTING MINING ENGINEER, &c.
GREENFIELDS, WREXHAM.

Mines Managed and Secretarial, with Office and Clerks, from £150 per annum
Reports, Surveys, &c., from £2 2s., and Expenses.

New and Second-hand Machinery Bought, Sold, or Exchanged.
Collieries, Mines, &c., supplied with all kinds of Plant, Machinery, Stores
and Materials, at low prices.

A Select List of Mines that will advance from 300 to 500 per cent.
on present prices.

THE "DIFFERENTIAL" PUMPING ENGINE
(DAVEY'S PATENT),
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DRAINING MINES, WATER SUPPLY OF TOWNS, IRRIGATION.
SUPPLYING DOCKS, PUMPING SEWAGE, and GENERAL
PUMPING PURPOSES.

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LEEDS.

HATHORN, DAVEY, and Co. have Patterns of "Differential" Engines of all
sizes, from 5 to 500-horse power, and have facilities for supplying very powerful
Engines and Pumps at a short notice.

See Illustrated Advertisement every alternate week.

MR. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. ALFRED THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON, E.C.

MINING INVESTMENTS.—Third Edition, just published.
"What to Select, and What to Avoid," by ALFRED THOMAS, 10, Coleman-
street, London, E.C. Will be forwarded on receipt of 12 stamps.

FERDINAND R. KIRK, STOCKBROKER,
5, BIRCHIN-LANE, LONDON, E.C.
Fortnightly Accounts opened in all Stock Exchange Securities on receipt of
the usual cover.
BANKERS: LONDON AND WESTMINSTER, Lothbury.

THOMAS B. LAWS, STOCK AND SHARE DEALER,
AND MINE ACCOUNTANT,
2, CHURCH COURT, CLEMENTS LANE, LONDON.

MESSRS. AKIN, SCOON, AND CO.,
STOCK AND SHARE BROKERS,
3, COTTHALL BUILDINGS, E.C.

MESSRS. ABBOTT AND WICKETT,
STOCK AND SHARE BROKERS, REDRUTH.
ORDERS BY TELEGRAM PROMPTLY EXECUTED.

MR. EDWARD ASHMEAD, 2, DRAPER'S GARDENS, E.C.,
MINING SECRETARY, AUDITOR, AND ACCOUNTANT.

MR. JOHN RISLEY, STOCK AND SHARE BROKER,
38, CORNHILL, LONDON, E.C.
ESTABLISHED TWENTY YEARS.
BANKERS: LONDON AND WESTMINSTER (Lothbury).

Shares specially recommended for immediate investment, viz.—West Caradon,
New West Caradon, Polrose, Parys, Sortridge, Wheel Crebor, West Crebor, East
Blue Hills, and Langford. These shares are likely to advance in price many
hundreds per cent. within a very short period.

MR. E. J. BARTLETT, 30, GREAT ST. HELENS, LONDON, E.C.,
has special dealings in Stock Exchange Securities and Miscellaneous
Shares of every description.

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MESSRS. J. TAYLOR AND CO.,
MINING ENGINEERS AND INSPECTORS,
86, LONDON WALL, LONDON, E.C.

Have Agents in the various Mining Districts of Great Britain, the Continent,
Australia, and the United States of America.

Inspections undertaken, either personally or by our Agents, and Reports of
Advice as to Working given.

MESSRS. F. E. WATSON AND CO.,
FINANCIAL AGENTS,
STOCK AND SHARE DEALERS,
4, COTTHALL BUILDINGS,
THROGMORTON STREET LONDON, E.C.

F. E. W. and Co. strongly recommend an investment in the following com-
panies at present prices:—
Lady Bertha Unl., 16s. East Chillaton Man- Perran Silver-Ld., 22s 6
Edgecumbe Mangn., 5s ganese, 45s. British & Foreign Boat
Lowering, 27s. 6d.

GRANVILLE SHARP, STOCK AND SHARE DEALER,
32, QUEEN VICTORIA STREET, LONDON, E.C.

Still recommends the purchase of shares in SOUND BRITISH MINES for
advance in price and increased dividends. In consequence of the generally im-
proving condition of Trade and Commerce, the market for all metals must
necessarily continue to improve, and the shares in all Sound British Mines are
certain to advance proportionately.

EAST CHIVERTON SILVER-LEAD MINES.
GRANVILLE SHARP specially recommends the purchase of shares, the mine
being on the eve of proving a very valuable property, as evidenced by the
recent important discovery in the 90 fm. level driving west, where is a course
of rich silver-lead ore already proved for over 30 fms., and has opened up valua-
ble reserves which are being increased daily between that (90 fm.) level and the
level over. A second 50-ton parcel of the ore was sold recently realising £631 5s.
It is an important fact that EAST CHIVERTON MINE is on the same lode which
in the mine immediately west produced between the years 1863 and 1872 silver-
lead ore that realised very nearly HALF A MILLION STERLING, and between
1875 and 1880 LEAD and BLENDE ORES amounting to £110,000. These facts
can be verified by the books in Mr. Granville Sharp's possession, at 32, Queen
Victoria Street, E.C.

Bankers: London and Westminster, E.C.

MR. ALEXANDER DAVIDSON,
STOCK AND SHARE DEALER,
139, LEADENHALL STREET, LONDON, E.C.

The following SHARES are FOR SALE, or OFFERS CAN BE MADE:—
120 Bratsberg, 35s. 10 Devon Great Consols, 100 Parys, 19s. 6d.
140 E. W. Rose, 21 pd. 27½.
100 E. W. Rose, 15s. paid. 40th Devon United, 70 Prince of Wales, 19s 6
140 Devon Friend., 15s 6d. 21 13s. 160 Killifreth, 35s. 6d.
(21 paid). 100 La Plata, 22 2s. 6d. 160 Old Shepherds, 4s dis
70 Devon Great United 110 Pen-yr-Orsedd, 17s 150 United Shepherds
(21 5s. paid). 15s. 20 Van, 28½. 100 West Crebor, 7s. 6d.
100 Frongoch (offer). 100 Sortridge Con. (21 100 Hington Down, 27s 6
(21 paid), 15s. 9d. 40 Gawton, 16s. 6d.
100 Mysore Reef, 8s. 9d. 100 East Blue Hills, 15s 6

FOR SPECIAL SALE AT NET PRICES:—
100 BODIDRIS (21 paid), 6s. 6d.
50 GREAT POLGOOTH UNITED (21 paid), at 9s. 6d. per share.
90 TAMAR SILVER-LEAD (21 paid), 17s. per share.

NOTE.—Shares in any of the above can be secured for payment end of January,
1882, on payment of 20 per cent. cash.

MR. JOHN L. M. FRASER,
(13 Years' Experience at the Great Miners and other Mines.)
CONSULTING MINING ENGINEER, &c.
GREENFIELDS, WREXHAM.

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Collieries, Mines, &c., supplied with all kinds of Plant, Machinery, Stores
and Materials, at low prices.

A Select List of Mines that will advance from 300 to 500 per cent.
on present prices.

to look for him; he had after the next morning just as preparations were being made south picadas, but instead of walking towards headquarters had kept on walking southward until he came to the end of the picada, when he found out his mistake, and there, knowing the danger of proceeding in the dark, he lit a fire and passed the night.

mining operations are being carried on all the while. Our four exploratory piccadas should, however, be pushed as far as possible as long as we find the ground to be of an auriferous nature. The direction in which we should carry on our exploration is dictated by the nature of the ground, that piccade which is the most promising being taken first in hand. Thus, if we have ascertained in the course of our operations at headquarters that the auriferous rock formation retains a certain continuity of character, and that the richer channels override the rock (say) in their bearing with that of the enclosing rock, then we should simply follow up those channels in both directions—say, north and south—the chances being that we may come across localities where the wearing down, decomposing, gold liberating, and concentrating agencies have been at work on a more extended scale, and where hence we may meet with portions of that channel containing a higher percentage of gold, and where the adjacent water-wear deposits are far richer than is the case with the deposits we are working upon at our present headquarters.

I hope your readers will understand the terms which I use so; e.g., with the expression water-wear deposits I mean such deposits as are or have been produced by various natural agencies wearing down, destroying, the auriferous parent rock, and thus setting free the gold that may be therein contained, but diffused throughout that rock in such a manner that even a large quantity of that rock would yield but traces of gold. It would lead us too far astray were I to attempt giving some calculations as to what vast masses of mountains must have been worn down in order to produce a water-wear deposit, containing a given percentage of gold. The term water-wear deposit does not fully express what I mean, there having been various other agencies at work in the production of such deposits, but water played the principal mechanical part in classifying, as it were, the products of that rock decomposition, and in concentrating the gold, &c., in convenient positions.

[To be continued in next week's Journal.]

TRADE OF THE TYNE AND WEAR.

Dec. 21.—It is pleasing to note that the coal and iron trades in this district have made fair progress during the year which is drawing to a close, the quantity of coal worked during the year will, there is little doubt, exceed considerably the output in the previous year, and yet sufficient demand has appeared to enable the coalmasters to command better prices for first-class coal. The price now got for first-class steam coal from the celebrated Hartley seam in Northumberland does not yet exceed 9s. per ton generally, and the best price got for Durham house coal is 10s. per ton, of course these prices are for coals f.o.b. in the docks, second-class and inferior coals are sold at much lower rates. The average value of coals in Northumberland and Durham at the pits' mouth continues comparatively very low, and this value regulates the prices paid to the miners according to the sliding scale. However, on the whole, as we have pointed out, the position of the coalmasters has improved considerably during the year, and the prospect for further improvement during the next year is encouraging, but much depends in a good understanding being kept up between the colliery owners and the miners and other classes of workmen. There are some signs of disquiet amongst the miners in Durham; a section of these miners appear to be dissatisfied with the present sliding scale to some extent, and they are agitating for some change in the arrangements when the time arrives for renewing the sliding scale, which will occur during next year, but judging from the past there is ground for hoping that the miners will be guided by their able leaders to exercise caution and refrain from any rash measures which may lead to disputes or strikes, and thus endanger the progress of this important industry.

A council meeting of the Durham Miners Union was held on Monday at Durham, when it was resolved to recommend to the coal-owners at a conference to be held at Newcastle this week several changes in the present sliding scale, which expires early next year. The steam coal trade north of the Tyne continues in a healthy state, and all the best works are fully employed. The prospect for this trade is certainly better than it has been for the past few years. The increased demand for this coal is partly caused by the attention which has been paid to the working and clearing of the coal of late years. The Long Wall system of working has been introduced at many collieries, and by this system a much larger proportion of round coal is produced than could be got by the old system of Pillar and Stall; the coal is also thoroughly cleaned, all slates, brasses, &c., being taken out, and thus this valuable steam coal is sent to all parts of the world in a condition fit for use, and the gradually increasing demand for it proves that its qualities are appreciated. The gas coal trade in Durham is also in a healthy state, all the best works are fully employed, and the contracts made for the delivery of this coal, which is unrivalled for gas purposes, have been made at slightly advanced rates. This coal is used for gas purposes not only in this country but on the Continent of Europe, and all parts of the world. The shipments of steam, gas, and all kinds of coal has continued good during the past week, and most of the works have been kept fully employed. There is also an increased demand for small and manufacturing coal consequent on the increased employment at the local ironworks and factories, but the price of this coal continues low. The demand for house coal has improved considerably during the past few weeks owing to the setting in of cold wintry weather.

THE NORTHERN INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting of members was held in the Wood Memorial Hall, Newcastle, on Saturday. The chair was occupied by Mr. G. B. Forster. Mr. Charles Parken read a paper "On Jet Mining in Yorkshire," in which he stated that the quantity of English jet used per annum was 3 or 4 tons, the value of which is 300l. to 1300l. per ton. There was imported from France and Spain over 100 tons of jet per year. The French jet costs manufacturers about 30l. per ton, and the Spanish jet 60l. to 140l. per ton. The English jet was much superior to that imported from abroad. Prof. G. A. Lebour read a very interesting paper on a most important subject—"The Present State of our Knowledge of Underground Temperature, with Special References to the Nature of the Experiments still required in order to Improve that Knowledge." Some discussion took place on this important subject, and votes of thanks were passed to the readers of those papers.

THE LEAD TRADE IN THE NORTH OF ENGLAND.—The advance in the value of lead has given considerable impetus to lead mining in the upper valleys of the Tyne, Wear, &c. Most of the existing mines are progressing well, and they are being vigorously developed, and some new mines and companies are projected. The Green Hurth Mines have proved a great prize, which cannot be expected to occur often, but there are some good mines in progress in the same locality. It is stated that the lead miners employed by Mr. Beaumont, M.P., are under notice, and it is feared that his mines will be closed.

The Chemical Trade on these rivers has improved considerably. It has at length been settled that the local makers will reduce very considerably the make, and if they adhere to this resolution there is no doubt that this trade may be revived to a very considerable extent, but all depends on the masters adhering to this arrangement to reduce materially the make. Some, however, hold the opinion that the trade is being gradually undermined, owing to the introduction of a different process of making some of the leading chemicals on the Continent. The new process, it is alleged, enables the continental makers to undersell our local makers. Should this be the correct matter ought to have the closest attention of the chemical manufacturers in this district.

The Pig-iron Trade is in a sounder and healthier condition than has been the case for some years. There is a large local consumption, the output of manufacturers of all kinds having increased much of late, and prices are higher for rails, which form the bulk of the output.

There are some hopes that the Darlington Iron Company will be revived. A large amount of steel is being made under the liquidation. Messrs. Bolckow and Vaughan and other steel makers are actively employed. Manufactured iron and steel are improving in value. Ship-plates are 7l. per ton; No. 3 pig-iron is 43s. The prospects of the Darlington Iron Company, referred to above, have considerably improved since March. The manufacture of steel has been

largely increased, and good profits on the manufacture have been earned. Upwards of 1200 tons of steel ingots have been turned out in a week. These ingots have been chiefly made into rails. The company has been engaged in making steel for tramways for this country, and for Japan, Australia, &c.

REPORT FROM CORNWALL.

Dec. 22.—It may be a question whether the week before Christmas or the week after is to be regarded as the duller, and most unbusiness-like—in ordinary and not holiday directions—in the year, but that taken together they form the duller fortnight there can be no doubt. It is not only that the holidays altogether derange the usual course of business, but that the season is one in which people are far more likely to take stock of their past transactions, and prepare for future operations, than to enter into any current proceedings of more than a merely hand-to-mouth character. This is the general rule, and the Christmas of 1881 forms no exception to it. Beyond the business of the ordinary meetings little or nothing is being done, and the transactions in the share market have never been so light in the whole twelve months as they are just now. Of course it will be understood that this is merely a temporary lull, and that renewed activity may be expected with the new year.

Not only do general prospects continue excellent, but on all hands the reports from the various mines of which meetings are being held are almost without exception of a highly favourable character. Next week we shall take our usual review of the results of mining operations in Cornwall and Devon for the year, but meantime we may express the conviction that increasingly satisfactory as the results of 1881 have been they will be very far distanced by those of 1882.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Dec. 22.—The large stocks of coal which continue in the hands of merchants consequent upon the mildness of the season will, it is this week thought, prevent any advance in coal with the opening of the New Year, and this notwithstanding the arrangements which have been come to with the colliers both in the South Staffordshire and the Cannock Chase districts regarding the wages question, therefore consumers have this week less difficulty than last in placing forward contracts on terms which they deem favourable to themselves. Prices are not quotably altered upon the last week. Coke was in improved demand at the meeting of the trade in Birmingham this afternoon; indeed, there were some heavy sales, because of the preparations which certain of the pig makers are maturing to increase their output. Prices of North Wales sorts delivered were 15s.; Derbyshire, 16s.; South Yorkshire, 16s. 6d.; common South Wales, 15s.; and Rhondda qualities, 17s. 6d. Pig-iron of most descriptions was worth more than three weeks back by in some cases 1s. 6d., and in others 2s. 3d. Derbyshire sorts were particularly strong at 50s. to 52s. 6d. Hematites were again 72s. 6d. to 75s. Native all-mines were 3l. 5s. to 3l. 10s., and forward contracts for this class of pigs would be accepted subject only to next quarter's rates. Finished iron is still selling well, and the suspension of operations for the holidays will this year be shorter than is usual. The United States are again entering the market freely.

The miners in the South Staffordshire and East Worcestershire coal fields are dissatisfied with the revised sliding scale, and they do not feel disposed to accept it unless the minimum of wage rate is fixed at 3s. 6d. for thick coal, and 2s. 9d. for thin coal. During the week meetings have been held in different parts of the district, and resolutions passed expressing disapproval of the scale as it now stands.

The makers of best stamping sheets announced towards the close of 'Change (Birmingham) this afternoon that they had followed the previous withdrawal of quotations by advancing prices 20s. per ton. This rise makes such sheets as those of Messrs. E. P. and W. Baldwin from 13l. to 19l. per ton. Somewhat extensive buying is kept up for this quality of iron by United States consumers, who by cablegram are anticipating expected advances on Quarter-day in this as in some other sorts.

The inquest on the four men who were killed by the recent explosion at Lord Granville's deep pit, Hanley, was concluded on Friday. Mr. Wynne, Government Inspector of Mines for North Staffordshire, and Mr. Sawyer, Assistant Inspector, attributed the explosion to foul air having come in contact with the furnace, and to the existence of atmospheric depression. The furnace it appears was damped down on the day and night before the explosion occurred, and ventilation was not fully restored. The inspectors gave it as their opinion that the plan of ventilating mines by means of furnaces was a bad one, but that where it was adopted the return air should not be allowed to pass over the furnaces. A verdict of "Accidental Death" was returned, the jury adding a rider to the effect that "in their opinion the explosion was caused by an accumulation of gas through the furnace by the neglect of the officials."

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Dec. 22.—In anticipation of the holidays business has been more active during the week at several of our mines and works in Derbyshire. The Iron Trade continues in a very satisfactory state, as the demand for pig has been of a steady character, by which stocks are not increased, whilst late quotations have been fully maintained in the Lancashire, Staffordshire, and other markets. At the foundries pipes for steam, gas, and water are not in such request as they were, but at some of the works there is plenty doing in other material, including engines and machinery. Finished iron has gone off better recently, so that the mills have been running with greater regularity. Steel rails are in as brisk request as ever, and the works at Dronfield continue to turn out large quantities of them for home and other lines. At the same place there has been a fair output of malleable iron castings of a light description, for which the place has long been noted. The collieries have been working well, but the men appear determined to have an advance of wages, and have asked their employers to meet them for the purpose of discussing the matter. But of this the colliery owners have taken no notice whatever, leaving the men to follow whatever course they may consider the best. But the miners are not in a position to take any steps that would lead to the stoppage of the collieries even for a short time, and this, of course, they are aware of. Coal is certainly rather higher than it was, but this has not counterbalanced the state of affairs during the summer months, when those who benefited the most by the collieries working were the men. Derbyshire does a larger trade in coal with the Metropolis than any other county, and this position it has fully maintained of late, for a heavy tonnage has been daily dispatched from Clay Cross, Eckington, Grassmoor, Blackwell, and several other collieries. This to some extent is due to the fact that the rate is much lower to the Metropolis from those places than it is from South Yorkshire, where the same seams of coal are worked. A good deal has also been sent to the West and put on to the Great Eastern Railway as well. As regards steam coal it may be said that it is not usually good at this time so far as shipments are concerned, and this may be said to be the case at present, but a good deal is now being taken for smelting purposes, and the railway companies, with increased Christmas freights, may be expected to take more. A considerable tonnage passes over the Midland for some parts of Northamptonshire, from which vast quantities of ironstone continue to be received. Gas companies are now taking a larger tonnage than they did, but such coal is contracted for earlier on in the year. In other descriptions of coal, including that for smiths and engines, the business doing is fully up to the average. For coke there is a demand for all that is made, and seeing that a good deal has to be imported from other districts, it is somewhat singular that more is not produced, seeing that it was about the most profitable way of treating coal.

In Sheffield trade generally is more than usually brisk, this being what is usually termed "bull week," when, to use a common phrase, the men pull out with their utmost strength, working night and day, so as to receive a more than usual amount of wages, seeing that in the following week little or nothing will be done, for Christmas fes-

tivities in Sheffield usually last a week, and in some instances more. The heavy branches of trade have been particularly active, and the mills have been running constantly. Good orders have been received for the steel-faced armour-plates for our own Government, as well as Italy, whilst China promises to be a good customer for them as well, the plates being patented by the Chairmen of the two largest companies in the town, so that this important branch is thoroughly localised, and is not likely to travel out of the town where armour-plates were first produced. Ordinary iron ship and boiler plates have been in good request, but steel plates are steadily making their way, especially for steam shipbuilding. Sheets, bars, and wire are also in steady request. Makers of crucible and Bessemer steel have become busier, so that there has been rather heavy importations of hematite pig, not much being made in the district. Steel rails are still in increasing demand, and for new orders higher prices are required, the quotations being from 7l. to 7l. 5s., whilst some old contracts were taken at from 6l. 5s. to 6l. 15s. per ton. Bessemer billets have been selling rather freely for wire, and some descriptions of cutlery and hardware, and prices for them have also advanced. The cutlery houses have been very active during the week so far, and the workmen have been making a good deal of overtime, the masters giving out work most freely, even when it is not required, so as to allow of the men receiving a good wage for the holidays. The forges engaged on railway material have been working well in tyres, axles, and wheels. At the foundries business has been tolerably good in some descriptions of heavy castings for machinery in particular, but in light and fancy work a rather moderate business being done.

In the South Yorkshire district the collieries have been kept well going, the demand being good for house coal just now in consequence of the stoppages that will take place next week. Rather more than usual has been put on to the Great Northern for London and other places, but prices at the pits are scarcely so good as they were towards the end of October and the early part of November, singular as that may appear. Steam coal has been going off tolerably well, but the shipments from the Humber have not been so heavy. The returns for the month show that an increased tonnage of coal was sent last month from South Yorkshire to Hull both by canal and water, but not quite so much has been sent to Goole. Writing concerning the port of Goole, it may be stated that the boring now being made within a few miles of that place is receiving rather more attention than it did, and many persons are of opinion that coal will not be found so far to the east of the recognised boundary of the coalfield. Coke has been selling freely of late for iron smelting, and at several places has already superseded that made at Durham.

An interim dividend at the rate of 5 per cent. per annum has just been declared by Sir S. Browne and Co. (Limited). This company, it may be said, is now manufacturing the new steel-faced armour-plates on a large scale, so that the prospects of the shareholders are looking particularly bright and encouraging.

TRADE IN SOUTH WALES.

Dec. 22.—The recent spell of fair weather has enabled merchants to pull up some of the arrears, and average quantities of steam coal have been sent away. Cardiff has exported 101,279 tons; Newport, 27,457 tons; Swansea, 17,287 tons. The amount sent away from the latter port is a decided improvement. Of patent fuel Swansea has sent away 3730 tons, and Cardiff 1764 tons. The iron and steel trades are in a healthy condition, and the gradual output of capital seems to indicate that ironmasters are satisfied, if not encouraged, by the present aspect of things. Good judges are of opinion that South Wales will soon have as great a reputation for steel railway bars as it used to have for iron. The amount of iron shipped at Cardiff last week was 2668 tons. The arrival of large quantities of iron ore at the various ports has put ironmasters at ease. The large amount of 8422 tons was received at Cardiff last week, and the returns from Newport is equally satisfactory. The pitwood trade is good, but stocks are running low; the amount received at Cardiff during the week was 1931 tons. The freight market is active, and the want of tonnage much felt.

The directors of the Newport Abercarn Black Vein Steam Coal Company (Limited) have declared an interim dividend at the rate of 6 per cent. per annum on the ordinary and preference shares for the half-year ending Sept. 30, 1881, against 5 per cent. per annum for the same period of 1880.

ROYAL COMMISSION ON ACCIDENTS IN MINES—EXPERIMENTS AT LLWYNPIA COLLIERY.—On Wednesday, Mr. Warrington W. Smyth, F.R.S. (Chairman), Prof. Abel, C.B., F.R.S., and Mr. Burt, three of the commissioners, accompanied by their secretary, Mr. Arthur Williams, entered upon the first stage of a second series of experiments for testing the behaviour of various kinds of safety-lamps when exposed to explosive mixtures of fire-damp. These experiments are being carried out at the Llwynpia Colliery of the Glamorgan Coal Company; those which were made on Wednesday, and those which will be made to-day, are merely preliminary. When continued at a later date they will be attended, no doubt, by other members of the commission, which includes Lord Crawford and Balcarres, Sir George Elliott, Bart., M.P., Mr. Lindsay Wood, Mr. W. Thos. Lewis, Prof. Clifton, F.R.S., and Prof. Tyndall, F.R.S. We understand that Mr. W. Thos. Lewis had fully intended being present, but that he was unexpectedly detained in London by a pressing engagement. The first series of experiments was carried out at Garaswood Hall Colliery, near Wigan—where there is a powerful blower of natural gas, and where Mr. Smithurst, one of the proprietors, afforded every facility to the commission—which was very thorough, and involved much patient labour and observation, several hundreds of experiments having been made with about 50 varieties of safety-lamps. The commissioners decided, to quote the words of this preliminary report, "that in order to arrive at trustworthy conclusions it was desirable to carry out the experiments in further detail, and to repeat them in other localities, and with other varieties of fire-damp." Hence the second series, which was begun with the gas from the Llwynpia blower. They think, however, that at the present moment, when we are startled and saddened by the recent disaster near Wigan, attention should be directed to the following paragraph in its preliminary report:—"In the meanwhile," the commissioners say, "one result was so distinctly elicited, confirmation of what had been already advanced by others, that it was thought right, pending the prosecution of the enquiry, to announce it to the Secretary of State for the Home Department. It is to the effect that the employment of the ordinary unprotected Davy and Clanny lamps in an explosive mixture, where the current exceeds 6 ft. a second, is attended with risk of accident almost amounting to certainty." The preparations for the further enquiry, which have been made under the direction of Mr. W. W. Hood, are now complete. The apparatus for obtaining accurate velocities and percentages of gas and air is housed in a comfortable and convenient brick building, round the walls of which 140 safety-lamps are hung. When it is borne in mind that each of these lamps has to be submitted to different tests, which must be observed with the greatest nicety and care, our readers will form some idea of the work which has to be done. Yet this forms a comparatively small portion of the labours which are being performed gratuitously by some of our busiest men.

GREAT WESTERN COLLIERY COMPANY.—We understand that the directors of the Great Western Colliery Company intend paying on Jan. 1, in addition to the six months' interest due on the B debentures, the twelve months' interest on the A shares for the year ending Dec. 31, 1880. The accounts for the present year will not be made up for about two months; therefore, the financial position of the company is indicated by this division of over 5000l. at the present time.—*South Wales Daily News.*

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Dec. 22.—The colliery proprietors of the North Wales collieries decline acceding to the request of the men for an advance of 5 per cent. in their wages on the ground that the state of the trade and the prices ruling do not warrant such an advance. At a meeting of the men recently held on the Wrexham racecourse there was hardly unanimity on the subject among the men themselves, and Welshmen like, they seemed to be reluctant to entrust too much power to their delegates. The brick and terra-cotta works of the Ruabon district are working well. The limestone quarries are in full work for agricultural and chemical lime and for the production of fluxing stone.

A very valuable discovery of ore was made last week at the Blaen Caelan lead mine, Cardiganshire, which will place that mine in a very profitable position. A further discovery of copper ore has also been made at the Cambrian Mine, the width of the ore being variously reported as being from 9 inches to 9 feet. I understand that machinery for the utilisation of the peat of the neighbourhood for smelting purposes is in the course of construction. The great event of last week among the lead mines of Cardiganshire was the starting of the new machinery at Bryn Dyfi Mine on Saturday morning.

There were present—Mr. Phipps and Mr. Johnson, of Liverpool, directors; Mr. D. C. Davies and Mr. E. H. Davies, of Oswestry, engineers, and Capt. Thos. Williams, the local agent; the machinery, which has been made by Messrs. Davies, of Machynlleth, and Messrs. Williams and Metcalf, of Aberystwith, and the whole went well, amid the cheers of the assembled miners.

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. CLXXXVII.*

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In consequence of the liability of the mineral to roll out of the corf, when the corf is inclined at much more than 15° to the horizon it becomes necessary to have either special corves or special carriages for the transport of the ordinary corves in roadways where the inclination exceeds 15°. When special corves are used the body of the corf can be kept horizontal in two ways. Either the pair of hind wheels are made proportionately larger than the front pair, or the frame is made triangular in elevation. In some instances both these methods have been combined. The chief objection to the use of special corves is that the mineral must be transferred from or to, and often both from and to, corves of the ordinary construction. In some rare cases, where the inclined roads lead direct to the shaft or the surface, the special corves are arranged for tipping. The body of the corf is then made to swing from two trunnions, mounted on a pair of triangles, forming the frame of the corf. When thus arranged the corves may be also employed in horizontal roads. The centre of gravity of the body of the corf, both when full and when empty, must of course fall below the centre line of the trunnions. Corves of the ordinary construction can also obviously be used in roads inclined more than 20° if they are furnished with a lid. The best way decidedly is to use special carriages for transporting the corves through the inclined road, as all emptying and refilling will then be avoided. The carriages are generally arranged to carry two corves at a time. The general form of such carriages is triangular in elevation. A rectangular platform, with a single or double set of rails (in case one or two corves are carried), is mounted in a horizontal position on the ordinary frame, carried by two pair of wheels. The two pair of wheels are usually of the same size, so that the ordinary frame has an inclined position parallel to the inclined floor of the roadway. A couple of uprights support the back end of the horizontal platform from the back end of the frame; the front end of the former generally rests directly on the front end of the latter. In highly inclined coal seams the inclined roads are at right angles to the horizontal roads; and hence in order to run the corves direct on to the carriages the rails on the horizontal platform are parallel to the axes of the carriage. Where the carriage is used in an inclined driftway, connecting two portions of a flat seam on different sides of a fault, the drift may be made in one line with the level above and below, and in this case the rails on the horizontal platform are at right angles to the axis of the carriage. The corves are usually prevented running off the carriage by short chains attached to a hook fixed to the carriage.

The following is another simple construction of carriage in which the corves are held more securely, and is better adapted than the former where the roads are very highly inclined. The inclined frame consists, as usual, of two long and two cross bars of wood, mounted on two pairs of wheels. Two long bars of iron, bent so as to form two horizontal and one vertical portion are bolted to the long wooden bars at the ends of the two horizontal portions, which are also bent at the ends to fit against the longitudinal bars. The lower horizontal portions of the bent bars are necessarily shorter than the upper, and have the rails for the corf fixed to them. The extreme outer end of the lower horizontal portion of the bent bars is supported by an inclined wooden or iron bar, strutted against the lower end of the long bars. The corves are kept in their place by ordinary hinged catches.

SUSPENDED RAILS.—These are used in places where the floor is of too broken a nature to admit of a pair of permanent rails being on the floor. The rails, which are best formed of flat iron, are suspended from the roof bars by L shaped supports. A grooved pulley runs on the rail, the axle of which is bent downwards, and afterwards upwards, so that the link from which the vessel containing the mineral is suspended is vertically beneath the rails. The vessel usually consists of a tub or kibble. The cranked axle of the pulleys passes down below the rails on the opposite side of the rails to the vertical portion of the L supports. The hauling rope is attached to the link carrying the kibble. In some arrangements two pulleys are used, and the kibble is hung from two trunnions, so that it can be readily emptied at the end of the journey. This method has been applied in several districts, and seems most suitable for the case of inclined roads or shafts.

WIRE TRAMWAYS.—There are two classes of wire tramways.—1. Those in which the wire serving as a rail remains stationary, a second wire or rope being used for hauling.—2. Those in which the wire carrying the vessel for transporting the mineral moves along, forming at once the roadway and the hauling rope. At Ardillat, in the South of France, a wire tramway of the first description is used for transporting ore from the mouth of the adit to the dressing works, a descent (measured vertically) of 105 feet, a distance of 600 feet. In this instance round rods, $\frac{3}{4}$ inch deep, are used for the rails, and are kept tight by a winch at the lower end. Two sets of rod rails are employed, placed side by side, at a distance of 39 in. A hauling rope of wire, $\frac{3}{4}$ in. diameter, is employed, which passes round a wheel controlled by a brake placed at the mouth of the adit. The full ore boxes going down hill draw the empty boxes up. The rods are kept strained so tight that no support is required for them between the ends. The ore boxes are suspended by means of four chains from the carriage, which rolls up and down the wire rod. The carriage is provided with two rollers. The ore boxes contain about 3½ cubic feet of ore, and 18 to 20 of these can be transported in an hour, or 700 cubic feet per shift of 10 hours. At Raibl, in Carinthia, the following arrangement is used. A couple of wire ropes are suspended from hooks let into the rocks at the upper station, being secured in the holes by pouring in molten lead. The lower end of each rope is wrapped round a separate winch, so that they can be tightened up separately. The carrying boxes are rectangular in plan, and wider and longer at the top than at the bottom. The boxes are suspended by hooks from a couple of single pulley sheaves running on the wire rope. The hook supporting the back end of the box is much longer than the one supporting the front, so as to keep the box in an approximately horizontal position. The boxes are formed of wood with iron straps, and when full weigh about 3 cwt. A hauling rope passing round a brake wheel at the upper end of the inclined plane is attached at this end to the full and at the lower end to the empty boxes. The bottom of the boxes are hinged on one side, and kept closed on the other by a short projecting lever from a vertical axis, the upper end of which is bent horizontally, and projects so far that when the full box arrives at the lower end of the incline it catches against a vertical prop, and is moved sideways, rotating the axis and the lever at the lower end, opening the bottom of the box, and allowing the materials to fall out.

In the second class of wire tramways an endless wire-rope passes round a pulley at each end station, one of the pulleys being driven by a steam-engine or other motor. On the rope are placed at equal distances apart carriers, which are moved along on and with the rope. The rope itself is supported from poles or wood pillars, having bearing pulleys, the rope resting in the groove of the pulleys. The vessels for transporting the materials are hung from the carriers by means of a bent or forked rod, so shaped that they pass clear of

the bearing rollers and stand for supporting the rope. The carriers are provided with a couple of pulleys, which enable the carriers to pass round curves, and to run off the rope at the end stations. The full vessels are carried along that portion of the rope moving from the loading place, and the empty vessels by that portion traversing in the opposite direction. The vertical supports for carrying the wire tramway are in the simplest cases mere poles or props when the distance apart at which they are placed is not great. When the nature of the country passed over is such that the distance apart at which the poles are placed is great, and they require to be high, the poles are formed by staging, consisting of four long uprights inclined inward towards a common centre, and connected by cross horizontal and inclined bars. The distance at which the supports are placed apart varies in practice from 50 yards to upwards of 350 yards, usually averaging, however, 120 yards. The height of the supports varies not only with the nature of the weights to be carried, but also with the nature of the country passed over, varying greatly even in the same line. The heights of the uprights must be so great that the load will not be liable to touch the ground on account of the sagging of the rope. In practice the height varies up to 100 ft. The bearing pulleys carrying the rope vary from 20 in. to 3 ft. in diameter, and are grooved. The flanges on each side of the groove are bevelled off round the circumference to fit the grooved underside of the carriers. The depth of the groove must not be too great, since otherwise the carriers will not mount the wheels, which are carried over the pulleys by the friction between these and the underside of the carrier. The carrier in its most general forms consists of a long rectangular block of wood, having a V groove or wide channel on the under side, where it rests on the rope. The carrier is covered on the top and two sides by sheet-iron, or by a suitably shaped casting, which projects somewhat downwards beyond the groove, and serves to obviate any liability of the carrier getting off the rope. A couple of bolts are passed through the carrier, each carrying a grooved pulley on the projecting end, or in some cases pulleys are placed at both ends of the bolts—i.e., a pair of pulleys on each side of the carrier. In this latter case the pulleys may be flat discs.

The rope is tarred over not only to preserve it from rusting, but to increase the friction between the rope and the underside of the carrier, which latter also is sometimes covered over by a mixture of oil and resin. The vessels for transporting the material are suspended, one from each carrier, by means of bent rods having a vertical and two horizontal portions. The upper horizontal portion passes through the carrier, and is fastened to it with a nut. The lower horizontal portion has a hook at the end from which the vessels for transport are slung. The length of this lower portion is such that when the centre portion of the rod is vertical the hook at the end of the rod lies vertically below the rope. The vessel in which the mineral is transported may be made of any material or form to suit the mineral, provided that it does not catch against the vertical supports. A sheet-iron kibble or rectangular box, swung from trunnions or with hinged door so that it can be readily emptied, is most usual. The vessels used for transporting the copper slate from the Martin shaft to the Krug Smelting Works at Eisleben consist of sheet-iron boxes suspended from a pin attached to the bottom of the box. The two side links from the pin are bent at the top, and meet where they are slung from the suspending rod. A short vertical pin is fixed to one side of the box close to one of the side links. A loose iron ring can be slid along the side link and dropped over the pin on the box, thus preventing the latter tipping over. When the box arrives at the end the ring is pulled off the pin and the box tips over at once, emptying the contents on to a dressing table. The rope is kept tight by passing it round a pulley fixed on a carriage to which a rope is attached, the latter passing round a vertical pulley and having a weight attached at the other end. It is most advisable to place the tightening pulley in the same place as the driving pulley, and so that the slack rope coming off from the driving pulley passes on to the tightening pulley.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,

MINEOWNERS, STOCK AND SHARE DEALERS & CO.,
1, ST MICHAEL'S ALLEY, CORNHILL, LONDON.

Nearly twenty years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1852), "Cornish Notes" (second series, 1853), "The Progress of Mining," with Statistics of the Mining Interest, published annually in the *Mining Journal* for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash, for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charge for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in on the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

Messrs. WATSON BROTHERS take this opportunity of stating that on July 1 they took into partnership Mr. H. J. DEAN, who has been for a number of years associated with the firm, and Mr. W. H. H. WATSON, who has had some years experience of practical mining and engineering in Cornwall, and is the son of the senior partner. The firm will still be called that of "Watson Brothers."

The number of weekly communications received from almost every part of the world in regard to remarks in this Circular indicate so plainly how much they are read (and, we trust, appreciated) that they will be continued by the same writer.

Indeed, while new blood is introduced to attend to the more laborious and mechanical details of the business, the old will have more time to devote to their different departments.

Hope deferred, we know, maketh the heart sick; and our own patience has been pretty well tried at D'Eresby Mountain. The agents, however, still write very sanguinely, and in the coming year we are to have better results. The new shares are going off better, and sufficient, we expect, will be taken to carry out the sub-division scheme.

The rage for gold mining in England was in 1854. The first company started was called the Britannia, then the Poltimore, and from the latter a cargo of 50 tons of stuff was sent to St. Helen's to be tested for gold, and the result was said to be a yield of 1 oz. 7 dwts. of gold per ton of red gossan. This set the "ball a-rolling," and Berdan's crushing and amalgamating machine was in constant employment testing ores from half the mines in Cornwall; and what was also somewhat extraordinary, gold was found in almost all of them, and such a vast field for enterprise seemed to be opened out that an enormous sum was paid for Berdan's patent. We sent ores from some of our mines, but none of them contained gold, and we were rather sceptical about the whole affair. Among the mines whose ore produced gold through Berdan's machine were—Tremollet Downs, 8 ozs. 1 gr. per ton; Wheal Tremayne, 4 ozs. 13 dwts. 8 grs.; Quintrell Downs, 3 ozs. 17 dwts.; South Devon Consols, 2 ozs. 13 dwts.

16 grs.; West Wheal Jane, 2 ozs. 6 dwts. 16 grs.; Wheal Jane, 2 ozs. 1 dwt. 7 grs.; Devon United, 1 oz. 10 dwts.; Cuthbert United, gossan, 1 oz. 5 dwts.; mundie, 1 oz. 4 dwts. 4 grs.; Exmouth and Adams, 1 oz. 2 dwts.; Devon Kapunda, 1 oz.; Tamar Maria, 1 oz. 6 dwts.; Dolfrowynog, 60 ozs. From the Cwm-Heisian Mines: 3441 lbs. of average ore was crushed, and yielded 1504 grs. of gold, or at the rate of 2 ozs. 12 grs. to the ton. Some of these ores before mixing yielded 5 ozs. to the ton. Mollard ore produced 1 oz. 15 dwts. Four Berden machines were erected at Poltimore, but nothing came of them. The Britannia, near North Molton, had been formerly called the Prince Regent's Mine, and some solid lumps of gold, worth 400£, were found in it embedded in gossan. An extended search for more resulted in a loss of 40,000£. The Poltimore, on the same vein, had been worked before as Prince Albert's Copper Mine. Remark upon the gold mania in his Review of the Progress in 1855 (see *Mining Journal* for end of that year), Mr. Watson said:—"The failure of the gold mining speculations has been attended with the failure of some of the speculators, and consequently gold mining reductions have been driven to greater straits, and although many experimental trials have been made, only one has been kept to work."

The discovery in the Prince of Wales is most important, and may lead to great results. Our readers may remember that a month or two ago we called attention to the 77, where the lode had been lost in the level by the old company, but found in a winze which could not be sunk deeper on account of the water, and that this water was very strongly impregnated with copper, and indicated a large deposit below. We added that the 90 west would be driven up to this point, and probably come into a rich course of ore. The report this week, it will be seen, states that in the 90 west the lode is now 5 ft. wide, worth 30£. per fathom, and is 17 fms. behind the point from which the strong copper water rises in the bottom of the 77. Here, then, we may have a grand course of ore; and we hope that history may again repeat itself. For some years ago we bought a lot of shares at a few shillings, and in a few weeks they rose, upon a discovery, to 3£. 10s. each. The present shareholders have gone to great trouble, and spent a very large sum of money in erecting powerful machinery, &c., to prove in depth the lodes which down to the 77 gave good dividends to the old company, and they deserve a good mine; the next point to watch is the cutting the lode at the 102, and this may happen any day.

The Wheal Crebor ore fetched 1345£. 8s.

The lode in East Blue Hills is now reported worth 30£. to 35£. per fathom. The 30 east has not been driven upon this (south) part of the lode; but it will be shortly; and then probably the winze will be drained and good ore ground opened out.

Further experiments on the Langford halvans lead the agent to write that they prove to him "we have a good and profitable concern." But the grand object of the company is in the mine itself.

Kirkmichael seems to be looking better.

Prince of Wales sold this week 2 tons 11 cwt. of tin for 156£. 11s. 8d., or at the rate of 61£. per ton. The sale would have been larger but for the bad weather for drifting.

MARKET ECHOES AND MINING MATTERS.

Notwithstanding that the Christmas holidays are now upon us, the metal markets keep remarkably firm. So far as regards tin, the state of affairs is more than satisfactory. Everything is, in fact, full of augury for even better prices in the early days of 1882, and for a long run of prosperity for our Cornish mines. The year is also closing with bright prospects for shareholders in copper mines, and many are sanguine that the early part of the new one will see a return to the old price of 15s. per unit. Since we last wrote there has been a rise of over 3£. per ton in English copper, and the quotation of Chili bars, which is usually taken as the barometer of the metal, has added 7½. cash. To our low-priced copper mines this rise is, of course, all-important. Should the unit once more advance to 15s. the immense surface accumulations of low grade ores at the Parys Corporation Mines could be returned at a profit. This would be quite apart from any success—extremely probable now—underground. Iron and spelter are likewise both closing with hardening markets, lead alone showing continued depression.

A Liverpool "Lead Mine Shareholder," in last week's *Journal*, is incorrect in stating that we made some "sweeping" remarks in the previous week's "Echoes" concerning United Van Consols and Glyn Mine. No such epithet can be applied to what we wrote. Our words were as follows:—"An improvement is reported in the Van Consols Mine of the United Van Consols and Glyn, but little as to the details of the improvement appears to be known at the London office. This is not as it should be." We understand that in future the reports, as soon as they are received at the London office, will be open for inspection by the shareholders. The only ground, we believe, for any complaint has been, therefore, at once removed. As far as the mines are concerned their prospects were probably never better than at the present moment. A "Lead Mine Shareholder" has also gone quite astray in his comments upon what we wrote respecting lead mines in general; in fact, to use his words, the only remarks "calculated to mislead the investing public" are his own very inaccurate comments upon our statement that very few of our market lead mines are now paying dividends, and that only a small number can pay their way. A "Lead Mine Shareholder," in opposition to these facts, states that there are 22 dividend-paying lead mines. He is utterly wrong. Of the 20 (not 22, as stated) appearing in the Dividend List, nine only have paid a dividend this year, and at least two of these are not at the present moment making profits. The remaining 11 are no longer dividend mines; indeed, two of the number never were dividend-paying mines at all, the only distribution in each case having been in the shape of vendors' guaranteed interest. Two others paid but a solitary dividend in each case (one more than four and the other nearly two years ago), two paid two dividends only (one ceasing in 1878 and the other last year), and one—the only Cost-book lead mine in the List—long since resumed making calls. Of the remaining four one ceased to pay dividends nearly four years ago, and the remaining three in 1880. The statement that an "unfavourable comparison" was made between lead mines on the one hand, and copper and tin mines on the other, is of course incorrect, as we made no comparison at all, although that made by "A Lead Mine Shareholder" is misleading.

Lead shares are now depressed, because few lead mines can pay their way at the present prices received for ores, yet it does not follow that this depression is always to last. Who two years ago would have ventured to predict that the present Christmas would see foreign tin at 109½? And yet two or three years ago the outlook for tin was quite as black as it now is for lead. At the depth of the tin depression mines were receiving something like 35£. per ton for their ore. The price is now nearly double. There may be as great a reaction in store for lead mines. The issue of the late Potosi special meeting was most unsatisfactory. The marked divergence of opinion exhibited between certain members of the committee naturally caused considerable confusion, and to such length was this difference carried that the committee then and there virtually ceased to exist, notwithstanding that a resolution was carried with 13 dissentients only, requesting the members to obtain the opinion of counsel whether there are any grounds of complaint in connection with the issue of the prospectus or the bringing out of the company, for which the vendors or other persons can civilly be held responsible. That the remaining two members will consider themselves a committee and proceed to carry out the wishes of the shareholders seems scarcely probable. We notice, however, that their late Chairman has already commenced the preliminaries for a sort of private investigation, and is inviting the co-operation of shareholders; but where there is such a want of unanimity amongst officials, committee, and shareholders generally as to the steps requisite to be taken in the present juncture, little eventual good, so far as any private investigation is concerned, can be expected to result. Considering the interests involved, and the labour, time, and expense already practically wasted, it is greatly to be regretted that in electing their committee the shareholders should have chosen gentlemen evidently so totally unfit for the delicate task they had to perform. One of the features in this committee's report was an alleged want of unanimity amongst the board, yet they were totally unable to agree even amongst themselves. There was a pretty general consensus of opinion at the meeting, however, that nothing could be alleged against the bona fides of the report. Even his chief opponent—a City magistrate and an ex-Lord Mayor—stated that he "had known him for 40 years and never knew wrong of him," and the meeting by a unanimous vote disagreed with all imputations upon his honour. But here we think lies the whole pith of the shareholders' case, the mines were sold to the company upon the vendor's own valuation, and that valuation appears to have been much too high, as it was based upon figures which, although undoubtedly correct, did not give a fair index of the capabilities and position of the mine at the time of the sale. An admitted error of fact occurs in the prospectus in the description of the tenure of about one-third of the property, and an error is alleged to have been made in the size of the trucks stated in the prospectus, thereby affecting the yield of gold. Whether these points are sufficient to enable the shareholders to get relief in a court of law against the vendor, or the directors, or both, appears to be the sole thing now to be determined. At the same time, looking dispassionately at the whole case, we have formed a strong opinion that the shareholders will take the wiser course if they abstain from legal action. Whatever might be the result of an appeal to law, it is certain that litigation would be both costly and protracted, and that in the meantime no practical good in the way of development could be done at the mines.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. von Gneibschek, Director of the Royal Bergakademie, Clausthal, the Harz, North Germany.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Dec. 15—	Frongoch.....	100	£ 3 5 0	Vivian and Sons.

EAST BOTALLACK.—Dec. 22: Good progress has been made during the month in sinking the engine-shaft; lode carries 50 lbs. of tin per ton of ore.

EAST CARADON.—James Kel'ow, John Kel'ow, D. c. 30: We beg to hand y the following report of our setting on Saturday last. To drive the cross-south at the 175 by nine men, stent 2 fms., or the month at 20¢. per fm.; driven

In the past month 1 fm. To drive the 150 east on the counter lode by six men, stent 2 fms., or the month, at 94; driven in the past month 2 fms. 4 ft.; lode 13 in. wide, composed of peach and quartz, with munda and spots of copper ore. To drive the 90 west on Fawcett's lode by four men, stent 1 fm., at 124; the lode here continues small and unproductive. To drive the 80 west on Fawcett's lode by six men, stent 2 fms., or the month, at 94; driven in the past month 2 fms. 4 ft. 6 in.; lode 1 ft. wide, composed of peach, quartz, and munda with good stones of copper ore; the ground here having improved for driving, we hope to make better progress towards the winze lately suspended below the 70, so as to make better use of the 70 west on Fawcett's lode by six men, stent 2 fms., or the month, at 134; driven in the past month 2 fms. 0 ft. 6 in.; lode 1 1/2 ft. wide, of a promising appearance, with occasional stones of ore. To stop the back of this level by six men, stent the month, at 34; the lode is 1 1/2 ft. wide, yielding 1 ton of ore per fathom. To stop the back of the 60 on Fawcett's lode by six men, stent 7 fms., or the month, at 34; lode 1 1/2 ft. wide, yielding 1 1/2 ton of ore per fathom. We have set two tribute pitches to four men, at 154. In 14. We have sampled a parcel of ore for sale on Thursday, computed 35 tons.

EAST LONG RAKE.—H. B. Vercoe, Dec. 22: Since my last report a great change has taken place in the 50 west, we have cut into soft ground, and a large stream of water exuding from the lode, and lumps of ore washing out; the increase of water overpowered the sallow for a few hours, but is lowering again to-day, and has not prevented work going on. I have no doubt the water is coming from the great north and south lode a short distance before us, and I have every reason to believe it will be found very rich, as it has produced hundreds of tons of lead in the shallow workings. In the 50 east there is no change since my last, the lode continues 1 1/2 ft. wide, spotted with lead. The lode in the stopes in the roof of the 50 is producing rich lead, and we anticipate a large quantity of produce in this district. The lead is yielding lead as for some time past, but the men have not yet commenced dressing their ore of which they have a nice heap sufficient to give them good wages at 64 per ton. Dressing going on regularly towards the next sampling, which will be the second week in January.

EAST ROMAN GRAVELS.—A. Waters, Dec. 22: In the 109 south of shaft the lode is 3 ft. wide, yielding stones of lead ore and blende. In the winze below this level south the lode is 5 ft. wide, with 3 tons of lead ore per fathom. The 97 south of shaft is worth 12 cwt. lead ore per fathom. The 97 north of winze, towards level coming from shaft, shows indications of the hanging wall portion of the lode. We shall prove this in a day or two. The 85 south of the shaft on east part of the lode is worth 1 ton per fathom. The two stopes in back of this level, one north the other south of winze, are worth together 2 tons per fathom. Nothing new in the 50 cross-cut east towards Big Spar lode. The tribute pitch in bottom of the 75 south is worth 12 cwt. per fathom. I have just received a "wire," stating that the new piston and valves for the compressor have been forwarded to Ministerley.

EAST VAN.—W. H. Williams, Dec. 22: I have no change to report this week. I intend preparing a full report and plan for the board meeting next week.

EAST WHEAL ROSE.—Capt. Wm. Skewes, and Thos. Dolge, Dec. 19: In the 109 south of shaft the lode is 3 ft. wide, yielding stones of lead ore and blende. In the winze below this level south the lode is 5 ft. wide, with 3 tons of lead ore per fathom. The 97 south of shaft is worth 12 cwt. lead ore per fathom. The 97 north of winze, towards level coming from shaft, shows indications of the hanging wall portion of the lode. We shall prove this in a day or two. The 85 south of the shaft on east part of the lode is worth 1 ton per fathom. The two stopes in back of this level, one north the other south of winze, are worth together 2 tons per fathom. Nothing new in the 50 cross-cut east towards Big Spar lode. The tribute pitch in bottom of the 75 south is worth 12 cwt. per fathom. I have just received a "wire," stating that the new piston and valves for the compressor have been forwarded to Ministerley.

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tinues to yield some splendid stones of lead, and is very promising. No. 2 stope is producing 15 cwt. of lead and 1 ton of blende per fm. No other change calling for remark. Yesterday we sold 30 tons of lead ore, at 122. 3s. per ton, and early next week we purpose sampling 50 tons of blende.

GREAT LAXEY.—F. Redcliffe, Dec. 21: For the same reason given in the last report, and in addition, having to renew the wood work of a bob and some rods in the 200, causing the pumps to be idle, water has been in the bottom or 259 for a fortnight past, consequently there can be no change there to report. Since passing through the slide in the 247 the lode has continued to produce some ore, but is not rich, and it is probable that a much better branch will be found on the side where the lode is more fully developed. In the 235 end a cross-cut is being put out to the east branch, and there are some 6 to 7 fms. to drive in all. At 6 ft. a branch of spar about 1 ft. wide, containing a little blende, is met with, but of no importance. The intermediate drivings and stopes below this level are of recent average value. No. 1 stope in the roof is worth 154, and No. 2 184, per fathom. The stope in the roof of the 220 south is worth 204, per fathom. A joint sink and stope in the sole of the 210 north is worth 124, per fathom, and No. 1 and 2 stopes 122 and 154, respectively. A new joint sink and stope in the sole of the 165 south is worth 154, per fathom. There is no change to speak of at any of the other places in this part of the mine.—Dumbl's: The lode in the 230 north is a little changeable from day to day, but is still opening a good lode, the average value since last report being about 354, per fathom. The average value of the lode in the 215 end since last reported has been 404, per fathom, but to-day there is another at least small slide made its appearance in the end, and the value of the lode will be uncertain again perhaps for a few days. The stope in the roof of this level is worth 204, per fathom, but is now close up to much richer ground. There is no change in the winze or stopes in the 200. No. 2 stope in the sole of the 185 has worked on to poor ground, and the men put to rise in the same level, where the lode is at present worth 124, per fathom. A joint rise and stope in the 125 north has improved to 354, per fathom. The intermediate driving below the 85 north having been driven far enough for the present, the men are now stopping the roof of the same place, where the lode is worth 604, per fathom. There is no other change to notice.

GREAT RETALLACK.—J. Harris, Dec. 17: In the 64 east the lode has a very kindly appearance, as it is showing everything favourable for a deposit of blende, and I firmly believe there is something of the kind near at hand, as we are meeting with occasional patches of good blende, but not enough to value.

GREAT WEST CHIVERTON.—John Curtis, Dec. 20: In the deep adit west, on the north lode, the lode is from 4 to 5 ft. in width, and letting out an unusual quantity of water. I am expecting every day to have something good to report.

GREEN HURTH.—James Polglase, Dec. 15: The lode in the end over Stand-up level is worth 8 tons of lead ore per fathom. It is really a splendid vein. The lode in the 31 north again promises to improve. We fully expect a good change at this point shortly. The various stopes and bargains throughout the mine are without change. The pit is nearly completed at the bottom level, and the necessary work commenced in preparing the shaft for the main rods, &c. The weather has retarded our dressing operations during part of the week.

GWYNIDR AMALGAMATE.—J. Roberts, W. Skewes, Dec. 21: Clementina: The engine-shaft is now down about 3 fms. below the 34. On the setting day we had 10 ft. more to sink to get down to the 44, and have sufficient room for a fork at the bottom of the shaft. We set this one contract, including also the dividing and casing down the shaft to the bottom, and making everything ready for drawing from the bottom, for 324. There is no change in the lode since our last report. The south end in the 34 is still without any change to speak of. The lode is about 1 ft. wide, with some good lead in the bottom of the end; set to two men, at 104, per fm. The north end is still worth about 1 ton of lead per fathom, and the lode continues very kindly in appearance. Set to two men, at 64, per fm. The No. 2 cross-cut, east of the 109, is worth 84, per fm. A winze sinking below this level, east of shaft, on south lode, is worth 104, per fm. The lode in rise just over this winze is worth 104, per fm. The stope, east of this rise, is also worth 104, per fm. The lode in the 10 end, west of new shaft, is 2 1/2 ft. wide, producing a little tin, but not enough to value.—Old Sump: In the 40, driving west of shaft, the lode is from 3 to 4 ft. wide, producing occasional stones of tin. The lode in the rise, in back of this level, east of shaft, is 2 ft. wide, and worth for tin and copper 104, per fathom.

KIRK MICHAEL.—R. Rowe, Dec. 21: In the bottom or 30 fm. level south the lode has improved; we have a very good rib of lead in the end about 6 in. wide. In the north end there is not yet any change of note, but the lode is now sinking on the back of the lode, and producing low quality stuff. A winze sinking below this level, east of shaft, on south lode, is worth 104, per fm. The lode in rise just over this winze is worth 104, per fm. The stope, east of this rise, is also worth 104, per fm. The lode in the 10 end, west of new shaft, is 2 1/2 ft. wide, producing a little tin, but not enough to value.—Old Sump: In the 40, driving west of shaft, the lode is from 3 to 4 ft. wide, producing occasional stones of tin. The lode in the rise, in back of this level, east of shaft, is 2 ft. wide, and worth for tin and copper 104, per fathom.

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iodo. The 50 south, in Petticoat road, showed no material change until to-day, when a rib of spar came in 5 in. wide right across the forebreast; it will be advisable to rise a few yards in the roof of this spar. In the 60 east, near engine-shaft, the rise in roof, on east and west side, is the same as last reported. The tributaries in the 50 north and south are earning fair wages. The foundation for the new engine is complete, and the shafting delivered on the mine. The first work will commence putting the engine together to-morrow, and I hope next week to be able to report that the erection was nearly finished. We shall then lose no time in getting the water forked out to the bottom, and start work at once to get at the body of ore left there when we were last drowned out. We have every reason to believe that after we have started work in the bottom we shall have ample pumping power to keep the mine dry, and raise lead enough to satisfy ourselves and the shareholders. Pioneer Copper Mines, Harlech: There is no change in the ground this week, but the indications are favourable for our soon cutting the copper lode. More spar and water now coming in in the end of the cross-cut.

POLKROSE.—W. Bennetts, Dec. 21: There is no change in the 100 east or west on the Margaret lode since my report for the meeting. The men are making good progress with the rise above the 90 for the diagonal shaft. In the 90 east, south we are still meeting with heads of mundle, but no sign of a lode yet. The lode in the 90, east of north cross-cut, is about 14 in. wide, producing saving work for copper ore, and the lode in the west end is 1 ft. wide, also yielding a little copper ore mixed with blende, and a little tin. We are making good speed in the 70 cross-cut north, which shall be pushed on as fast as possible to reach the lode ahead. There is nothing new to report in the western adit.

PRINCE OF WALES.—S. Roberts, G. Rowe, Dec. 21: In the 102 cross-cut south, which is driven about 9 fms. from shaft, there is no change worthy of notice. In the 90 east west lode is 5 ft. wide, worth 30¢ per fathom—25¢ for copper ore and 5¢ for tin. This end is now about 17 fms. behind the point from which the strong copper water rises in the bottom of the 77. In the 100 in the back of this level the lode is 5 ft. wide; worth 12¢ per fathom for tin, with good stones of copper ore. In the 90 east end we are still driving by the side of the lode. In No. 1 stope, in back of the 90, east of shaft, the lode is improving for copper, and is worth 8¢ per fathom for tin. No. 2 stope, in the back of this level, is worth 15¢ per fathom for tin. Good luck without change.

ROMAN GRAVELS.—Arthur Waters and Son, Dec. 22: There is no change of note in the 125, north or south of new engine-shaft, for some time past. The stopes in the north end of the mine, in back of the 110, are yielding ore in profitable quantities. The 110, going south-east of Roman lode, on the caunter lode, is worth for lead ore and blende 10¢ per fathom. The 110 south, on Roman lode, shows a very strong vein, worth 1 ton of lead ore per fathom. The forebreast is now just under the winze coming down from the 95, and we purpose rising at this point with the boring machine next week, which is a distance of 36 fms. 1 ft. south of the shaft, the ground being whole throughout. The 95 south is driven from the new shaft to Robert's winze 155 fms. 4 ft., thence the end 8 fms. 4 ft.; the lode in the forebreast is worth 3 tons per fathom. The stopes in the back of this level, north and south of the various winzes, are yielding ore in profitable quantities. The 80 south is driven 169 fathoms from the new shaft; the lode in the present end is 5 ft. wide, worth 2½¢ tons per fathom. The three stopes in the back of this level, south of Belton's winze, are also yielding ore in profitable quantities. The 65, south of new engine-shaft, to Evans' winze, is a distance of 153 fathoms, thence to Jones' winze (which is going down in the centre of the great south run of ore) is 22 fathoms, and from there to the end of the shaft, the lode is 13 fathoms; the lode is worth 15¢ per fathom in the end in three divisions, together 5 ft. wide, worth 5 tons per fathom, and improving again as we go forth. The part of the lode being carried in Jones' winze, below this level, now down nearly 10 fathoms, is worth 6 tons per fathom. Our object is to push down here, so as to be able to drive north to meet the level coming from the engine-shaft, and in that way hole the two points as soon as possible; we have a rich section of ore ground here. The stope in the back of the 65, following the end, is worth 10 tons per fathom. The three stopes in the back of the same level, in regular order, south of Stokes' winze, are worth together 15 tons per fathom. The 50 south of engine-shaft, the lode is worth 15¢, from the 40, to the 130 fathoms, the lode is 13 fms. 4 ft. wide, and the lode in the great south run of ore is in front of this forebreast, and we are pushing forward at this point for the purpose of communicating with a rise which is coming up from the 65 on a great lode and rich course of ore. The drift south of the before-mentioned winze, midway between the 50 and 40, is opening out rich stope ground; as far as we can see this run of ore extends to the 20, if not to the 6, and will be taken away in due course. The surface work is going on as well as the severe frost will admit of. The carpenters are busy putting up sheds over the new line floors. We have to-day sampled 200 tons of lead ore, for sale on Thursday next.

RUSSELL UNITED.—J. Gifford, J. Bray, Dec. 22: Last Saturday we set Stephen's engine-shaft to sink by nine men, at 13¢ per fathom. Lode 4 ft. wide, spotted with black and grey copper ore. The lode in the 97, east of Matthew's shaft, is from 2 to 3 ft. wide, producing more ore and mundle. Although not sufficient to value, the end is very promising. No lode has been intersected in the cross-cut north at the 55 since last report. The lode in the rise above the back of 55 is worth 6¢ per fathom. The machinery is working well.

SINCLAIR LEAD AND BLENDE.—W. Edwards, Dec. 22: Operations are being urged forward at the Waco portion of the property. The two shafts are now complete, and we are making fair progress in sinking the shafts. There is no lode in the shaft, and I have taken out a stone of lead weighing over 4 lbs., and have every belief in this part of the mine very soon turning out favourably.

SORTIDGE COPPER.—Wm. Skewis, Dec. 22: The adit is being pushed on as fast as possible, and we should have been further in, but for the water, which broke upon us in such force as not to be contended with. We were consequently obliged to turn the end and keep a little off from the course of the water. Still we are making good progress, and believe in early success.

SOUTH CONDORROW.—W. Rich, W. Williams, H. King, Dec. 21: The water has increased in Marshall's shaft, owing to the almost continuous heavy rains, and we are making fair progress in sinking the shaft. In the 40 end west the lode has a strong and kindly appearance, and is worth 10¢ per fathom. The stope in the back of this level is worth 8¢ per fathom. The winze below the 40 east of Marshall's is worth 9¢ per fathom. The lode in the back of the 40 east of King's is worth 8¢ per fathom. We have suspended sinking the winze below this level on account of the water. We are, however, rising in the back of the 50 towards the winze referred to. The lode in the rise is worth 10¢ per fathom. The 50 end east is worth 7¢ per fathom. The stopes in the back of this level are worth 10¢ per fathom. The 60 end east is worth 12¢ per fathom. The 60 end west yields good stones of tin. The stope in the back of the 60 west is worth 15¢ per fathom. In the 70 east of King's we have begun to drive east; the north part of the lode, which carries good stones of copper and some tin; this part of the lode is large and porous, and is letting out water freely. We are pushing on the rise in the back of the 70 west towards Marshall's shaft. The lode in the back of the 80 east of King's is worth 15¢ per fathom.

SOUTH DARREN.—Henry James, Dec. 22: The 120 east continues to improve, and is this week worth 1½¢ ton lead ore per fathom. The lode in the same level west is increasing in size, and beginning to improve for lead. This driving is now about 3 fms. short of being under the eastern end of the run of good ore ground in the level above, and at its dip east I expect daily to get a further improvement here. The lode in the 110 west, west of the flat joint, is small and disturbed by the influence of the joint, but on the east side the lode is worth 1 ton of lead ore per fathom. In a winze sinking in this level, about 15 fms. in advance of the 120 end, the lode is wide, and worth 2½¢ tons lead ore per fathom. In the 110 end east the lode is improving in size and value for lead and copper ores, with good indications for further improvement as we advance. The stopes are looking very well.

SOUTH DEVON UNITED.—Wm. Hooper, Dec. 22: The lode in the 110, east of Brook engine-shaft, is 16 fms. 4 ft. wide, with a value of 70¢ per fathom. There is no particular change in the appearance of the lode since last reported. In No. 1 stope, in the back of this level, the lode is 3 ft. wide, with a value of 54¢ per fm. In No. 2 stope the lode is 4 ft. wide, with a value of 64¢ per fathom. In No. 3 stope the lode is 4 ft. wide, with a value of 64¢ per fathom. In No. 4 stope the lode is 4 ft. wide, with a value of 64¢ per fathom. In extending the cross-cut north at the 100, east of Brook engine-shaft, we have intersected another portion of the lode about 18 in. wide, containing capel, quartz, and stones of good quality copper ore. We intend continuing the cross-cut some little distance further to prove the lode, and that nothing of value is left in this direction. In the stope in the back of this level the lode is 4 ft. wide, with a value of 64¢ per fathom. The lode in the 93, east of Brook engine-shaft, is 5 ft. wide, with a value of 84¢ per fathom. There is little or no change in the character of the lode, it presenting much the same appearance as for some time past. In the stope in the back of this level the lode is 4 ft. wide, with a value of 54¢ per fathom. The men are still engaged cross-cutting south at the 80, east of Brook engine-shaft, where the lode, as far as proved, is 7 to 8 ft. wide, composed of capel, quartz, and stones of copper ore—a strong looking lode. We shall continue this before the south or hanging wall is intersected. In No. 1 stope in the back of this level the lode is 5 ft. wide, with a value of 94¢ per fm. In No. 2 stope the lode is 5 ft. wide, with a value of 94¢ per fathom. In No. 3 stope the lode is 4 ft. wide, with a value of 84¢ per fathom. At the adit level west of old sump shaft the men have completed erecting the derrick for hauling the stuff; also finished putting in footway, and the men again resumed driving where the lode is of the same promising appearance, composed of splendid gossan, with rich spots of copper ore. In Martin's shaft the ground is very favourable for sinking, and fair progress is made. On account of the heavy rain we have had during the past week, we have had an increase of water in the above. However, as the weather again improves, no doubt the water will decrease as well.

SOUTH PENSTRUTHAL.—S. Davey, Dec. 22: The men are making good progress in sinking the engine-shaft below the 70, also flat-rod shaftmen cutting down shaft for skip-rod, rods, &c.

SOUTH WHEAL CREBOR.—J. Goldsworthy, Dec. 21: The 26 fm. level is forked and the pumps are in full work below. We had some slight delay in getting the connection to answer well before connecting the bottom drawing lift. At the present rate of forking the water will be out some time to-morrow. Every effort has been made in erecting the machinery and in pumping. The moment there is news from the 46 you will be advised.

TAMAR SILVER LEAD.—R. Goldsworthy, Dec. 22: No lode has been taken down in the 57 south since last report, consequently there is no change to call for any remark. The lode in the 27 south is improving, and opening out wider, producing some rich stones of silver-lead, and promising for further improvement. The casing, dividing, and footway are completed down to adit. The new wire-ropes are put in and draining commenced. The sinking of the new shaft has been resumed by a full pair of men.

TANKERVILLE GREAT CONSOLS.—A. Waters and Son, Dec. 22: The 220, west of Watson's shaft, on No. 1 north lode, has slightly improved in character during this last week; it is letting out a lot of water, and shows every indication of improvement for lead ore. The 220 east is worth 25 cwt. per fathom. The three stopes in the back of this level, north and south of cross-cut, are worth together 3½ tons per fathom. The stope in the back of the 220 west, on Tankerville lode, is worth 1 ton per fathom. The 206 west, on No. 1 north lode, is worth ½ ton per fathom, and improving. The stope in the 206 west, on No. 1 north lode, is worth 25 cwt. per fathom. The 192 west, on north lode, is worth 30 cwt. per fathom. The same level east is worth 12 cwt. per fathom. No change in the 132, west of shale of old lode, since last reported on. The stope in the 74, east, south lode, is worth ½ ton per fathom. The stope in the 72 east, on said lode, is worth 20 cwt. per fathom. The 35 east is worth 6 cwt. per fathom. Penner's Mine: The 132 east, on Isy Old lode, is yielding stones of ore. The 120 east shows a lode 13 in. wide, yielding stones of ore, but not to value. The 120, east and west of cross-cut, on Warm Water lode, are both yielding saving stuff for lead ore. The 80 east, on Big Ore lode, is without

change to notice since last reported on. The stope in the back of this level east is worth 14 cwt. per fathom. The stope in the back of ditto west is worth 18 cwt. per fathom. The winze in the 80 west, on Warm Water lode, is worth 30 cwt. per fathom. The 80, west of said winze, on this lode, is worth 20 cwt. per fathom. The stope in the back of the level is worth 18 cwt. per fathom. The 70 east, on Big Ore lode, is also worth 18 cwt. per fathom. Penner's Pit: This shaft is secured, caulked, and divided into good and bad leaders fixed from surface to Boat level, over 50 fms. thence to the 20 below adit. We shall have Bland's engine ready to wind at this shaft by the middle of next week.—Bog Mine: The engine-shaft is secured, caulked, and divided from surface to the 115 below Boat level, and the men are busily engaged clearing and securing the levels east and west of same on the course of the middle lode. The 100, west of Bunting's shaft, on south lode, is yielding good stones of lead ore. The 70 cross-cut, north-east of engine-shaft towards side lode, is in softer ground than for some time past. The Boat level, east of Bunting's shaft, is still in a wide lode, yielding good stones of blende. The tribute pitches have slightly improved for lead ore and blende since last week. The water is now 7 ft. below the 115. Engine and pitwork doing well.

TAVISTOCK GREAT CONSOLS.—H. Treganowan, Dec. 21: In our drive west, on the footwall of Rix Hill lode, the lode is improving in size, and is now 3 ft. wide, and still maintains the same beautiful character and kindly appearance as last reported on. There is another part of the lode standing to the south with a horse of killas between, but I am inclined to think that they will unite as we proceed westward. In looking at the prospects of this mine I would say that if the mine is worked with the energy and capital it is worthy of, there is no doubt of its being highly remunerative, as the property embraces all the requisite elements for great success.

TIN HILL.—J. Hollow, Dec. 20: New lode north end not quite so large; south is a little larger; stamps working regularly.

TRESAVEAN.—Henry Browne, Dec. 21: You will be pleased to hear that not only is the portable engine fixed in the house, which is nearly completed, but that the shaft trace is up at Wheel Boys. Tramroad is in active progress. I am sending down tram or bridge rails for the road, wire-ropes for winding down (the latter is at hand), Blake's crusher and engine for driving same, together with weighbridge for weighing tin stuff before it goes to the crusher from Below Mine, the whole of which will be had next week. The job of the 90 is on ob end, and will be fixed in place by to-morrow for certain, so that now the erection will proceed fast.

TREVINCE CONSOLS.—John Mayne, Dec. 22: Wheel Moor lode is worth fully 16¢ per fm.—New Middle Lode: This lode continues to improve, and, as before stated, I believe we are on the top of a large course of copper ore. No other alterations.

UNITED VAN CONSOLS AND GLYN LEAD AND BARYTES.—J. Roach, Dec. 22: The 70, driving west on the north lead of the lode, contains a mixture of lead throughout. The lode at this point is 45 to 50 ft. in width. The best branches of ore run south into the body of the lode; full value can only be ascertained by cross-cuts, which will shortly be tested thereby. In the 60 west I have let a cross-cut to drive south on the lode. This is under very promising ground, studded with lead in the level above; we, therefore, expect to meet with a course of lead—indeed, we have already found solid stones and strings of ore, with indications favourable to success, as the cross-cut shall be extended in this champion lode. In the 50 we are continuing the cross-cut south in the lode under the No. 1 stope, where we find detached stones and branches of lead; the south or hanging wall is yet to be reached. In the event of the lode not being so good as we expect, we intend to rise above the level of the branches of lead already passed through, as well as sink underneath, where we feel confident of meeting with produce in remunerative quantities. The level driving east of winze at the 40, to meet No. 1 stope, will soon be communicated therewith, when we shall have a large quantity of lead to cut down and send to surface for extraction of lead therefrom. It will also afford us safety and greater facilities for excavating the roof, which will then be 14 fms. in length. We have started a cross-cut south on the lode in the 25 above the No. 1 stope; here we shall meet with a continuance of the lead from the latter, and if so it will greatly improve the value of the lode. The 50 west of the lode is still in an immense lode of crystallized carbonate of lime, carrying a little blende, and bears every indication of great productiveness, as it shall be extended further west and under the large deposits of lead taken from shallow levels. All disinterested parties who have seen this level favour my opinion, and believe it will lay open very valuable ground in the western section of the company's property. No. 1 stope is still upwards of 40 ft. in width, containing lead as last reported. I may here add the roof is very heavy, and calls for great caution in carrying on the excavations. I believe it will yet produce hundreds of tons of lead. No. 2 stope working eastward towards No. 1 stope has improved a little, and now affords us a good quantity of lead stuff to pass through the dressing machinery. There are four men working on tribute, at 90¢ per ton of cleaned lead, and earning fair wages. We have about 30 tons of lead raised towards our next sampling, which we shall daily augment. Machinery and plant in good order.—Settings: The 70 west, by four men, at 84¢ per fathom, and producing 6 to 7 cwt. per fathom. The 60 west, by four men, at 110¢ per fathom; cross-cut south yielding stones of lead. The 50 west, by four men, at 80¢ per fathom; the cross-cut yields good stones and branches of ore. The 40 west, by three men, at 70¢ per fathom; now over No. 1 stope. The 40 west, by four men, at 90¢ per fathom; producing 4 to 5 cwt. per fathom, and 4½¢ per fathom. The 50 west of Gundry's, by four men, at 140¢ per fathom; producing lime, spar, and blende. No. 1 stope, by nine men, at 60¢ per fathom; producing 1 ton per cubic fm. No. 2 ditto, by six men, as directed by agent; producing 10 cwt. per cubic fathom, and cost about 50¢ per fathom. Tribute in the 40 and 60, by four men, at 90¢ per ton of cleaned lead. On Monday last every point under operation was carefully inspected by a gentleman of high repute, and who I believe is an able and competent miner, and who attended at the instance of a private shareholder without notice to me. I should feel much pleased if his report was made public in the columns of the Journal. If he could advise anything being done for the interest of the company beyond what I am now carrying out I should be glad to adopt it.

WALKHAM UNITED.—W. Phillips, Dec. 21: On Saturday last the following bargains were set:—To drive a cross-cut at the 32 to intersect the north tin lode, by four men; price 6¢ per fathom. In the north tin lode, to continue the rise in the back of the 20, by four men, at 8¢ per fathom. The adit level east, by the side of the lode, by two men, price 5¢ 10¢ per fathom. No. 1 stope, in the back of adit level, by four men, at 4¢ per fathom. No. 2 stope, by two men, price 2¢ 10¢. The lode in the stopes is being desued at present.—West of the River: The 70 west, by four men, at 84¢ per fathom, and 4½¢ per fathom. The 60 west, by four men, at 140¢ per fathom; producing lime, spar, and blende. No. 1 stope, by nine men, at 60¢ per fathom; producing 1 ton per cubic fm. No. 2 ditto, by six men, as directed by agent; producing 10 cwt. per cubic fathom, and cost about 50¢ per fathom. Tribute in the 40 and 60, by four men, at 90¢ per ton of cleaned lead. On Monday last every point under operation was carefully inspected by a gentleman of high repute, and who I believe is an able and competent miner, and who attended at the instance of a private shareholder without notice to me. I should feel much pleased if his report was made public in the columns of the Journal. If he could advise anything being done for the interest of the company beyond what I am now carrying out I should be glad to adopt it.

WEST BASSET.—James Nicholas, Francis Hodge, Dec. 21: The lode in the 165, west of Grenville's shaft, is producing good stones of tin; this end is nearing the run of tin seen in the levels above. The lode in the 154 west is worth 10¢ per fathom. The lode in the stope to the west of the rise in the back of this level is worth 40¢ per fathom, and to the east of this rise it is worth 25¢ per fathom. The lode in the 144 west stope is worth 20¢ per fathom, the lode in the back of this level is worth 20¢ per fathom, and to the east of cross-cut, is worth 15¢ per fathom. The lode in the 134 west, and to the east of cross-cut, is worth 12¢ per fathom. The lode in the winze sinking in the bottom of this level is worth 15¢ per fathom. We have communicated the west winze that was sunk by the boring-machine in the bottom of this level with the 114, where we have laid open a large piece of tin ground that can be worked to a much greater advantage and with less cost. The lode at this point is about 6 fms. wide, and is worth 14¢ per cubic fathom. The lode in the 124 west, driving by the boring machine, is again improving, and is yielding good stones of tin. A further improvement may be expected here, and, in the event of the lode not being so good as we expect, we intend to rise above the level of the branches of lead already passed through, as well as sink underneath, where we feel confident of meeting with produce in remunerative quantities. The level driving east of winze at the 40, to meet No. 1 stope, will soon be communicated therewith, when we shall have a large quantity of lead to cut down and send to surface for extraction of lead therefrom. It will also afford us safety and greater facilities for excavating the roof, which will then be 14 fms. in length. We have started a cross-cut south on the lode in the 25 above the No. 1 stope; here we shall meet with a continuance of the lead from the latter, and if so it will greatly improve the value of the lode. The 50 west of the lode is still in an immense lode of crystallized carbonate of lime, carrying a little blende, and bears every indication of great productiveness, as it shall be extended further west and under the large deposits of lead taken from shallow levels. All disinterested parties who have seen this level favour my opinion, and believe it will lay open very valuable ground in the western section of the company's property. No. 1 stope is still upwards of 40 ft. in width, containing lead as last reported. I may here add the roof is very heavy, and calls for great caution in carrying on the excavations. I believe it will yet produce hundreds of tons of lead. No. 2 stope working eastward towards No. 1 stope has improved a little, and now affords us a good quantity of lead stuff to pass through the dressing machinery. There are four men working on tribute, at 90¢ per ton of cleaned lead, and earning fair wages. We have about 30 tons of lead raised towards our next sampling, which we shall daily augment. Machinery and plant in good order.—Settings: The 70 west, by four men, at 84¢ per fathom, and producing 6 to 7 cwt. per fathom. The 60 west, by four men, at 110¢ per fathom; cross-cut south yielding stones of lead. The 50 west, by four men, at 80¢ per fathom; the cross-cut yields good stones and branches of ore. The 40 west, by three men, at 70¢ per fathom; now over No. 1 stope. The 40 west, by four men, at 90¢ per fathom; producing 4 to 5 cwt. per fathom, and 4½¢ per fathom. The 50 west of Gundry's, by four men, at 140¢ per fathom; producing lime, spar, and blende. No. 1 stope, by nine men, at 60¢ per fathom; producing 1 ton per cubic fm. No. 2 ditto, by six men, as directed by agent; producing 10 cwt. per cubic fathom, and cost about 50¢ per fathom. Tribute in the 40 and 60, by four men, at 90¢ per ton of cleaned lead. On Monday last every point under operation was carefully inspected by a gentleman of high repute, and who I believe is an able and competent miner, and who attended at the instance of a private shareholder without notice to me. I should feel much pleased if his report was made public in the columns of the Journal. If he could advise anything being done for the interest of the company beyond what I am now carrying out I should be glad to adopt it.

WEST GODOLPHIN.—T. Hodge, F. Hodge, Dec. 19: The 12 west on Wilson's lode produces low price tinstone. The 80 east is in a very kindly lode, worth 6¢ per fm. The 70 east is worth 6¢ per fm. The 70 west is barely of the influence of the cross-course, the lode in which is worth 6¢ per fm. In the 60 west end the lode is improving, and producing some rich stones of tin. In the 50 west the lode is rather disordered by a cross-head; from a sample assayed to-day it is worth 10¢ per fm. The 60 east winze on caunter lode is worth 10¢ per fm. The stope in back of the 70, just under said winze, is worth 12¢ per fm. The 20 west end is worth 6¢ per fm. The mine, on the whole, is holding out very good promise, and if the different bodies open out so well as indications lead us now to expect the mine will soon be brought into a good position.

WEST HOLWAY.—R. Rowlands, Dec. 22: New Shaft: The lode still maintains its strength and value, and is worth 35 cwt. of lead to the fathom. In the 110 west the lode has very much improved, and looks likely to give us good returns. No. 1 rise in the 80 west is worth 1 ton of lead per fathom, and is in a splendid looking lode.—Ram Shaft: Another small parting has come in the forebreast, spotted with lead, which is a good indication that we are approaching the lode. We are very busy on the dressing floors.

WEST LISBURN.—W. Norrhey, Dec. 21: I am pleased to say that all the machinery is working well. We are fastly draining the mine. The water will be taken out to-morrow.

WEST KITTY.—Wm. Vivian, Dec. 22: We have had a breakage in our pit-work, therefore we have not been able to work our bottom levels on account of the water. I hope to have the water in the bottom level again in a day or two.

WHEAL COIT.—Joseph Vivian, Dec. 22: We have put down a footway to the shallow adit level. We are now clearing this level; I hope to get down to the deep adit level shortly, which is about 50 fms. deep. I then purpose to drive west under the great workings that are now to be seen from the surface to the shallow adit, where large returns of tin have been made.

WHEAL CREBOR.—G. Rowe, H. Phillips, Dec. 19: The lode in the new shaft sinking below the 120 is 4 ft. wide, composed of capel, spar, mundle, and good quality copper ore to the value of 10¢ per fathom. The lode in the 120 end east is 6 ft. wide, improving in character, with good stones of ore. The lode in the 102 in the back of the 120 is producing arsenical mundle and ore to the value of 10¢ per fathom. The lode in the 103 end is without change during the past week. Our progress in driving the 103 cross-cut north is very satisfactory, and the ground highly mineralised. All our rich stope ground throughout the mine above and below the 103 is yielding the usual quantity of ore, and looking exceedingly cheering. All other points are without change.

WHEAL FORTUNE.—R. W. Dowling, C. W. Philip, Dec. 21: The lode in the back of the 40, east of Cook's shaft, is from 2 to 2½ in. wide, composed of good copper and mundle. The lode in the back of the 30, east of Lamping's cross-cut, is 2 ft. wide, composed of good quality mundle and copper. The lode in the back of the 30, west of Cook's shaft, is 1 ft. wide, composed of good quality copper mundle. The lode in the back of the 20, west of engine-shaft, is from 15 to 18 in. wide, composed of good quality mundle and copper. No change to report in stope in the back of the 20, east of Cook's shaft, since last report. We have taken down during the past week about 32 tons of coppery mundle.

WHEAL GRENVILLE.—T. Hodge, Dec. 20: I see no change in either of the ends worthy of any remark since my last. White's winze, sinking below the 165 east, going down on the 178 end, is not looking so well; present value, 15¢ per fathom. The three stopes in the back of the 165 are not looking quite so well for tin. Caddy's stope, in the back of the 150, is improved; worth 18¢ per fm.; no other changes. The machinery throughout the mine is in good order, and looking very well indeed.

WHEAL GRENVILLE.—T. Hodge, Dec. 17: Setting Report: The 50 to drive east, by two men and one boy, at 55¢ per fathom; the lode is yielding a little lead, and promising of further improvement. A cross-cut in the 50 to drive north under the new shaft, by four men and two boys, at 60¢ per fathom. A stope below the 50, near the cross-course, by three men and two boys, at 30¢ per fathom. The new shaft to sink by nine men, at 240¢ per fathom; now down 35 fathoms, and there remains about 2½ fathoms to sink and rise to bring the shaft to the 40, which will occupy about a fortnight to accomplish. A hole bored through left down the water. The rise referred to in the 40, against the new shaft, by two men and two boys, at 120¢ per fathom. Three stopes in the back of the 40, near the cross-course, by eight men and four boys, at 27¢ 6¢ per fm., worth on an average 2½ tons of copper ore per fathom. The 27, east of engine-shaft, to drive by two men and two boys, at 35¢ per fathom; the lode is producing some very rich black oxide of copper, and is exceedingly promising. Our sampling of copper ore for eight weeks takes place on the 20th inst. (not the 13th, as previously announced), the computed quantity to sample being 185 tons.

WHEAL LUSKEY.—Wm. Skewis, John Gifford: We are pleased to report a great improvement in the lode driving into the hill; the lode was divided by a bed of granite, but on the south part there have been taken during the last 48 hours splendid stones of grey and black ore, some producing 19 per cent. of copper.

WHEAL PEEVOR.—W. T. White, T. C. King, Dec. 19: Setting Report: On Saturday last the following bargains were set:—The engine-shaft is now sunk to the 100, and the shaftmen are now preparing for solaring over the fork and for fixing the plunger-lift as fast as possible, which we hope to complete in the time specified at the meeting. We shall then at once cross-cut for the lode in the 100. The 90 to drive west at 5¢ 5¢ per fathom; lode full size of the end, worth 16¢ per fathom; this end is improving as we go west. The 90 to drive east, by two men and one boy, at 55¢ per fathom; the lode is 4 ft. wide, worth 15¢ per fathom; this end is coming back near the level of the old level. The lode in the back of this level is communicated to the 80; this has not only given us good ventilation at the 80, but have also laid open a good section of stope ground. The 80 to drive west at 5¢ 5¢ per fathom; lode worth 12¢ per fathom. The rise in the back of the 80, east of shaft, at 7¢ 10¢ per fathom; lode worth 10¢ per fm. The 80 to drive west, on middle lode, at 5¢ per fathom; lode worth 15¢ per fm. The 80 to drive east, on middle lode, at 3¢ per fathom; this end is now in the cross-course, and we expect to find a good lode east of the same. We expect to cut the middle lode in the 80 cross-cut, east of cross-course, in four or five weeks time. The 70 to drive east, on middle lode, at 5¢ per fathom; lode worth 18¢ per fathom; this end is opening out in good ground. The 70 to sink in the bottom of the 70 west, at 8¢ per fathom; lode worth 16¢ per fathom. The cross-cut to drive south at the 60, at 10¢ per fathom. We cut a branch in this cross-cut last week, which we consider to be a dropper of the lode; this branch is about 10 in. wide, and produces tin. The 60 to drive east of Nicholl's cross-course, at 8¢ per fathom; lode large, producing low quality work for tin. We have six stopes working on tutwork, at prices varying from 24. 10s. to 30¢ per fathom; lode worth in each about 10¢ per fathom. We also set 17 pitches on tribute, at tributes varying from 6s. to 11s. 1d. The mine we are pleased to say is opening up very well, especially in the bottom and on the west of the lode.

WHEAL PRUSSIA AND CARDREW UNITED.—J. Pryor, Dec. 21: Prussia Lode: In consequence of the increase of water, as referred to in last report, we are still unable to sink the skip-shaft or drive the 15 (under adit). The lode in the 40 east is improving, now worth about 9¢ per fathom. The lode in the stopes in the 30 east are looking just the same as last reported. In the 30 west the lode is looking a little more promising. All other points are without change.—Cardrew Lode: We are making very good progress in clearing the debris in the engine-shaft, and have cleared same to the 60, but in consequence of the large accumulation of ore, &c., we are not yet in a position to examine same; every effort is being made to clear this level, when accomplished to hope to be able to report favourably on same. It is our pay and setting next week, when a full report will be sent.

WHEAL SISTERS (Lelant).—W. Rosewarne, Dec. 22: In the last few days we have had an important improvement in Hollow's flat-rod shaft, sinking below the 170; the lode now being worth for the length of the shaft (12 ft.) 40¢ per fathom; this shaft is now sunk 10 fms. below the 170, and we shall in the course of a few days commence driving the 180, east and west, in a good lode of tin. The shaft is now sunk to the 130, and the ends set to drive east and west, the lode in the 130 west being worth 7¢ per fathom, and the 130 east is laying open tribute ground. The ends and pitches are producing their usual quantity of tin stuff, and provided the improvement holds good at Hollow's shaft it will shortly enable us to increase our returns of tin.

WHEAL UNY.—Wm. Hambley, Wm. Prophet, Jas. White, Dec. 22: Good progress being made in sinking Hind's engine-shaft below the 170 fm. level. The lode in the shaft is large, composed of quartz, peach, and mundle, with a little tin, and looks likely to improve. No. 1 stope in the back of the 170 fm. level west of Incline shaft is worth 18¢ per fathom for tin. No. 2 shaft west of the above shaft is worth 15¢ per fathom for tin. The 160 end west of Incline shaft is worth 6¢ per fathom. A stope in the back of this level is worth 20¢ per fathom.—Old Sump Shaft: A stope in the back of the 170 fm. level is worth 8¢ per fathom.—King's Shaft: The 180 end east is worth 12¢ per fathom for tin and copper. A stope in the back of the above level is worth 8¢ per fathom. The lode in the 150 end east is very much improved in character and appearance, and worth full 6¢ per fathom for tin. A stope in the back of this level is worth 8¢ per fathom for tin. The lode in the 140 east is letting out water very freely, and very much improved in appearance, and worth 6¢ per fathom for tin. We have commenced a rise in the back of the 140 fm. level and now up 3 fms. in a lode worth 5¢ per fathom. This rise will draw the water from the store in the bottom of the 130, and also open up a good section of stope ground. The ground in the 130 cross-cut is much harder, which makes the progress slow. The tribute pitches throughout the mine are looking much the same as last reported. The water has slightly increased on the pumping engine, but not to interfere with the progress of sinking the shaft. We are pushing on the surface work on the dressing floor with all speed.

YEOLAND CONSOLS.—J. Manley, Dec. 21: We have now cross-cut into the lode a distance of 31 ft.; there is as yet no indication of the north or hanging-wall, the last 10 ft. driven presents a most promising appearance, the competent parts being all a mine of copper. I may here remark that the first 10 ft. of the lode, and also the last 10 ft., yielded saving work for tin. As the lode at this point is so large, and as I intend for the future to carry on operations on the north part of the lode, I have put the men to cut away necessary ground for laying tramroad into cross-cut, I shall then continue the driving in an oblique direction so as to reach the hanging-wall. I shall push on this work with all

despatch, as I am eager to reach the very rich lode gone down in the shallow adit about 35 fms. in advance of our present end.

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The Mining Market: Prices of Metals, Ores, &c

METAL MARKET—LONDON, DEC. 23, 1881.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Pig, G.M.B., Clyde...	2 12 4	2 12 6	English, ingot, f.o.b...	115 0 0	—
" Scotch, do. do.	2 13 0	—	" bars	116 0 0	—
" Fars. Welsh, f.o.b. Wales	6 0 0	6 2 6	" refined	117 0 0	—
" " in London	6 10 0	6 12 6	Australian	108 10 0	109 0 0
" Stafford	7 10 0	7 15 0	Banca	nom.	—
" in Tyne or Tees	6 2 6	6 5 0	Straits	108 10 0	109 0 0
" Swedish, London	10 10 0	10 15 0			
Rails Welsh, at works	6 0 0	6 2 6			
Sheets, Staff., in London	8 10 0	9 0 0			
Plates, ship, in London	8 0 0	8 10 0			
Hoops, Staff., in London	7 10 0	8 0 0			
Nail rods, Staff., in Lon.	7 10 0	7 15 0			
English, spring	12 0 0	13 0 0			
" cast	30 0 0	30 45 0			
Swedish, keg	15 0 0	—			
" fag. ham.	15 10 0	—			
LEAD.					
English, pig, common	15 5 0	—			
" " L.B.	15 12 6	—			
" " W.B.	15 15 0	15 17 6			
" sheet and bar	15 5 0	—			
" pipe	17 0 0	—			
" red	17 0 0	—			
" white	21 0 0	23 0 0			
" patent shot	17 16 0	—			
Spanish	15 0 0	—			
NICKEL.					
Metal, per cwt.	15 0 0	16 0 0			
Or, 10 per cent. per ton	20 0 0	25 0 0			
QUICKSILVER.					
Flasks, 75 lb., war.	6 5 0	—			
SPELTER.					
Rilegian	18 0 0	18 7 6			
English, Swansea	19 0 0	—			
Sheet zinc	22 0 0	—			

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for
Canada; 1X 6s. per box more than 10 quoted above, and add 6s. for each X.
Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Since our last issue the metal market has been rather
quieter, nevertheless the tone has kept good, and the tendency for the
most part strong, and considering it is the week previous to Christmas,
fully an average amount of business for this time of the year has
been transacted. There is very little change in a branch; a few operators
there may have been who, from a desire to close their accounts for the current
year, have been more ready to sell than would have otherwise been, but the greater
number of holders have evinced more disposition to hold to their stocks, if not
buy further quantities, rather than sell at the present time. Not that the pre-
valent rates would not in many, if in most instances, leave handsome profits,
but the prospects of the trade being so bright higher prices are anticipated, and
an increased demand looked for; hence it is easy to account for the reluctance
on the part of sellers to make sales unless full prices be paid. It is a matter of
no small amount of congratulation at this invariably happy season of the year
to look back upon the past twelve months, and see how the trade has been
gradually throwing off and reviving from that depression which had en-
countered it a year or two before, while the trade has at times been said, and this
too of its present condition that it has not for a very long time previous been
in so flourishing a condition. Therefore, upon this score, it may safely be as-
serted, without fear of contradiction, that the happiness of the present season
will be in no way marred; but, on the contrary, there is every reason to believe
its enjoyment will be increased therefrom. Therefore, in wishing all our nu-
merous readers the "Compliments of the Season," we cannot but look back with
satisfaction on the past, and hopefulness for the future.

There are strong indications of a coming trade prosperity, proof of which need
not now be largely entered into, for reference has only to be made to the various
manufacturing centres, where briskness now exists, while in many cases the
works hold enough orders to keep them busily occupied for a long while hence,
while in other instances it is worthy of remark that if the mills are not booked
forward to any large extent it is owing to their reluctance to accept orders save
only for early delivery, and not that buyers would have been only too glad
to have made contracts for forward delivery had they possessed the opportunity.
We dwell upon this more especially, because it shows that there are still orders
yet to be given out, and by the present tendency of the market it would seem
that such orders will have to be placed at advanced rates, consequently holders,
not slow to realise this fact, are loth to give way or make any concessions what-
ever in prices. For the remainder of the year there may not, unlikely, be
quietude in the trade, for the holidays intervening must necessarily, more or
less, check business, and prevent any movements of a material character in
prices, and consequently no particular change is to be anticipated during that
time, but afterwards increased vitality may, perhaps, be given to the various
markets, which will not unlikely be further augmented by the present steady-
ness in prices, as also from the busy state of the several mills, plants, and ma-
chinery in the United Kingdom. The firmness with which manufacturers keep
to their quotations is a proof that they look for higher prices, and the con-
tinuance of a large business, otherwise they would not hesitate to book orders
for forward delivery at current rates. Another reason for expecting de-
creased prices is the fact that buyers purchase all second-hand lots as speedily as pos-
sible whenever they are offered at the slightest reduction, signifying that they
also look for advanced prices.

COPPER.—During the past week there has been considerable steady-
ness in this market, prices having undergone hardly any change.
Business, however, has been fairly good, several transactions having
been recorded at the present advanced rates. As far as can be
judged from the present appearance of the market, and from the
various circumstances in connection with the trade, the market is now in a far
more satisfactory condition than what it has been at any time during the cur-
rent year. Prices are higher, and show an advancing tendency, and this not
from speculation but from the execution of a large bona fide business, as is clearly
proved by the continuance of good deliveries. Hence statistics have from time
to time showed a reduced stock, whilst it is thought not unlikely but that the
next statistics will again show a further reduction in spite of the holidays ne-
cessarily interfering somewhat with the consumption. And this conclusion has
not been arrived at without being backed with some important facts, which show
the great probability of a reduced total visible stock at the end of the year.
First of all reference need only be made to the bi-monthly returns, which prove
excellent deliveries for the fore part of the month, so that already there has
been a good start, which must bear an important influence upon the total sta-
tistics when issued. Again, manufacturers all round are said to be very busy
with the orders in hand, and will, therefore, have need to continue buying the
raw material, which of course will produce a favourable impression upon stocks.
There may be two reasons to which prices not having further advanced this week
may be ascribed—first and foremost on account of operators not being disposed
to renew purchasing largely before the close of the year; and, secondly, owing

to some of the late buyers preferring now to sell and take their profits. It is,
however, worthy of note that this latter reason cannot be attributed to most
holders. They prefer for the most part to keep to their stocks, as by so doing
there appears a greater chance of realising increased profits later on, for the mar-
ket is gradually and steadily assuming a much more favourable position, and the
permanent establishment of higher rates will, doubtless, be greatly supported
by the present steadiness in prices.

IRON.—There is no new feature to have to record in the state of this
market, steadiness continuing the chief characteristic. The manu-
factured trade keeps very brisk, and prices all round are particularly
strong, while manufacturers in not a few instances are evidently
expecting being able to realise better prices, and hence they are
gradually withdrawing from the market, and show no disposition to make con-
cessions. As we showed last week the satisfactory condition of the manufactured
trade is apparently the principal incident of a favourable character in con-
nection with this trade. There is general briskness in this branch; all classes of
iron are largely sought after, it matters not, bars or hoops, sheets or nail rods;
they are all alike receiving considerable attention from buyers from the highest
to the lowest qualities. North country, Staffordshire, and Welsh makers, are
one and all in good demand, and the advancing prices produce little or no falling
off in the number of enquiries. With regard to the pig iron market, which is
somewhat quiet, there is no new feature. Business is dull, through an absence
of a large speculative demand. Speculators, not without cause, have in great
measure withdrawn their attention from this metal and cast it upon others.
There is but one reason which makes this metal unattractive, and that is the
enormous public stock. Irrespective of this everything appears to point to
higher rates, so that it seems rather risky if any buyers are keeping back their
orders merely on the chance of buying more favourably later on through this
cause. It should not be forgotten that last year when makers' returns were pub-
lished, notwithstanding the great increase which was then made in the public
stock, the total stocks, both public and private, together showed a good decrease.
If upon the publication of the statistics a similar result should be found this
year prices will doubtless greatly advance. Again, should any strikes or diffi-
culties with the men arise prices could not well remain long at their present
moderate figures. Consequently buyers who are holding off for reduced rates
do not appear likely to meet with much success, especially with the glowing
and rosy prospect which appear to be before the trade.

There has been but little business doing this week on the Glasgow warrant
market. On Monday transactions were recorded between 51s. 11½d. to 51s. 3½d.,
the closing price being 51s. 10d., and on Tuesday the market receded from
51s. 9d. to 51s. 4½d., advancing again to 51s. 6d. On Wednesday there was a
rather better tone, and the price advanced to 51s. 9d. to 51s. 10d. Yesterday
the market was stronger, and business done up to 52s.; while to-day the market
closed at 52s. 6d., with a good tendency. The shipments last week compared
well with those for the corresponding period of last year, being 7255 tons,
against 5593 tons, or an increase of 1662 tons, and which makes the total ship-
ments for the whole of this year 553,207 tons, against 642,440 tons for the same
time of last year, and 555,513 tons in 1879. The number of furnaces in blast re-
mains at 106, and the public stock has been further increased to 625,608 tons,
against 624,992 tons last week, or an increase of 1665 tons. The imports of Mid-
dleborough pig iron into Grangemouth last week were 10,110 tons, against
10,546 tons for the same week of last year, or a decrease of 436 tons, and which
leaves a total increase for the whole of this year, compared with last, of 29,333
tons. The Cleveland market is said to be inactive, and there is only a small
demand for pigs. No. 3 is quoted at 43s., and No. 4 at 42s. for present delivery,
forward delivery parcels being quoted at special rates. In warrants there is not
much doing, quotations ruling between 43s. 3d. and 43s. 6d. The shipments of
pigs last week are said to have amounted to about 1900 tons. There is a strong
demand for plates and angles, the former being quoted at 71. to 71. 2s. 6d., and
the latter at 67. 10s. Boiler-plates and sheets are offering at 87. and puddled
bars at 57. 7s. 6d.

The Wolverhampton market is said to be strong with an advancing tendency.
Manufactured iron is largely sought after. Bars range between 61. 15s. and
81. 2s. 6d., while sheets are quoted at 81. 10s. to 81. 15s. for singles, the usual
difference being asked for doubles and trebles. Pigs are also very firm, and are
quoted at 47s. 6d. to 57s. 6d. for ordinary qualities, the price asked for Spring
Vale sorts being 65s. Barrow and Tredgar hematites are quoted nominally at
75s. A very cheerful tone is reported to exist on the Birmingham market, and
prices show considerable buoyancy. All mine hot-blast pigs are quoted at 75s.,
and cold-blast rule at 90s. Cindes pigs are offering at 45s., and Derbyshire and
Northampton qualities rule at 10s. more. With regard to manufactured, un-
marked bars are quoted at 71. 5s. for forward delivery; while extensive orders are
said to be given out for girder iron, chiefly for South America. The trade at
Sheffield is said to be in a most satisfactory condition, and in anticipation of a
further rise at the beginning of next year buyers have been purchasing in fairly
large quantities, although the ironmasters do not show much disposition to book
forward. From Wales the advices are of a promising character, and general
briskness still prevails. According to advices from New York of the 16th inst.
above influence does not make any material effect upon prices, but is merely
being quoted at 82s. 50, and the latter at 82s. 50; while Gortharrie remains 82s.,
and Glangarnock at 82s. 50. Scrap iron has fallen 8s., and now rules at 30s., but
old rails are 2s. dearer, and are offering at 31s. 10. Hematite pigs have receded
4s., and are quoted at 82s., and Cleveland pigs remain without alteration at 82s.

TIN.—There is no change in the state of this market, a fair busi-
ness at steady prices being the principal characteristic. There is no
great disposition manifested to buy, but far less to sell, and what
business has been done has been chiefly between 108l. 10s. and 109l.
for cash parcels of foreign. The improving tendency of tin-plates,
and the increased prospects of a better demand for them, necessarily produces
an improved enquiry for tin, and tends to implant a stronger tone; neverthe-
less, on account of this metal being so greatly in the hands of speculators the
above influence does not make any material effect upon prices, but is merely
pointed to by the "bulls" as a probability of dearer prices shortly ruling. On
the other hand, the "bears" cling to the hope that the high prices will en-
courage supplies, which would have an injurious effect upon prices. However, there
does not appear to be many operators who care about "bearing" the market.
Like other metals the prospect of tin is also considered good; and, therefore,
dearer prices are looked for, although perhaps no very immediate change may
occur.

SPELTER.—A good business has been done this week at full prices
—18l. for ordinaries, and 18l. 5s. to 18l. 7s. 6d. for specials.

LEAD.—This market remains quiet, there being only a small amount
of business doing, while prices keep very steady.

STEEL.—Business continues fairly active, and no fresh feature
characterises the market.

TIN-PLATES.—These are stronger, and show a decided upward
tendency.

QUICKSILVER.—This is without feature. The importers have sold
fairly at 61. 5s., and second-hand holders refrain from offering.

Considering the near approach of the Christmas holidays, and the
general disinclination to open fresh accounts at the end of the year, the
MINING SHARE MARKET has been fairly active during the
week for most stocks, and particularly so for a few low-priced shares.
Those mostly dealt in have been East Pool, Gunnislake (Clitters),
Wheal Crebor, Prince of Wales, East Blue Hills, Parys Copper,
Devon Friendship, Bratsberg, Bedford United, and a few others.

TIN remains steady, and there is no alteration in the tin standards
for ore since our last. Shares in tin mines generally are not very
active. Blue Hills are quoted 2 to 2½; Cook's Kitchen, 26 to 27;
Carn Brea, 25½ to 26½; Dolcoath, 87 to 89; East Lovell, 3 to 3½.
East Pool keeps firm, and have been in good demand at 35 to 36.
Killfirth, 30s. to 35s.; Polrose, 10s. to 15s.; South Condurrow, 11
to 11½; South Crofty, 9 to 10; South Frances, 15½ to 16; Tincroft,
18 to 19.

West Basset, 14½ to 15; West Frances, 17 to 18; West Kitty, 8½
to 8¾; West Peavor, 14 to 15; West Phoenix, 1 to 1½; Wheal Agar,
13½ to 14½; Wheal Basset, 5½ to 6; Wheal Grenville, 11 to 11½;
Wheal Jewell, ½ to ¾; Wheal Peavor, 11 to 11½; Wheal Uny, 3½
to 4; Wheal Kitty, ¼ to ½; at the meeting the accounts showed a
loss of 253l. on four months' working, and a debit balance of 1459l.
The tin sold (34 tons) realised 2224l. Wheal Jane, 27s. 6d. to
32s. 4d. (call paid); at the meeting, on Tuesday, the accounts showed
a loss of 1186l. on five months' working, and a debt of 4100l. A call
of 3s. 6d. per share (2150l.) was made. During the five months the
tin sold realised 2811l., but the agent hopes to increase the returns
in future. New Kitty, 1½ to 2; North Busy, ¾ to 1; Phoenix, ¾ to 1;
3½; Wheal Sisters, 2 to 2½; Goodevere, 1½ to 1¾; North Penstruthal,
¾ to 1; South Penstruthal, 5s. to 10s.; West Polbrean, 1½ to 1¾; a
lode has been cut in the cross-cut north 3 ft. wide, producing a little
tin, and supposed to be the Wheal Kitty south or top lode.

COPPER continues firm at a slight advance on last week, and at
the Cornish ticketing on Thursday the standard advanced 2l. 10s.
The average price of the ores sold was 37. 17s. 6d. per ton for 6½ pro-
duce. Bedford United are quoted 1½ to 1¾; Carnarvon Copper, 15s.
to 17s. 6d. Devon Great Consols, 7½ to 8; the sale here, 945 tons,
realised 2082l. 1s. 6d. Devon Great United, 10s. to 15s. South
Devon United, 25s. to 30s.; the sale here, 330 tons, brought 1135l. 3s.
Gawton, ¾ to 1; the sale at this mine, 140 tons, realised 350l. 3s.
Gunnislake (Clitters) have been firm, and leave off 3½ to 4½. Mel-
lancar, 4½ to 5; Marke Valley, 1 to 1½; Mona, 9 to 10; Mona
Consols, 1½ to 1¾; Morfa Du, ¾ to 1; New West Caradon, 9s. to 11s.;
Parys Copper, ½ to 1. Prince of Wales have been in great demand,
and leave off 17s. 6d. to 22s. 6d.; the lode in the 90 west is worth
30l. per fathom.

South Caradon 30 to 35; the sale of ore on Thursday (400 tons)
realised 2579l. 19s. 6d. West Caradon, 15s. to 20s.; West Crebor,
6s. to 8s.; Wheal Crebor, 3½ to 4½. West Seton, 14 to 15; at the
meeting a loss was shown of 1403l. on four months' working, and a
debit balance of 3180l. The copper ore sold realised 284l.; arsenic,
353l.; tin ores, 2650l. The report states that there is a good lode
in the shaft and the mine is altogether looking better. Devon

Friendship, 17s. 6d. to 20s.; the 30 is worth 5 tons of arsenical
mundic per fathom, with good stones of copper ore. The adit end
is worth 6 tons, and the stopes from 3 to 10½ tons of mundic.

LEAD MINES continue without any material alteration in quota-
tions, which are for the most part nominal. Vans are quoted 8½
to 9; Great Laxey, 18 to 19; Roman Gravels, 10½ to 11½. The
sampling on Thursday will be 200 tons of lead ores. Tankerville
Consols, 7s. to 9s. The 220 west is improved and other places
yielding lead ores. At Bog tribute pitches are looking better.
Northern Lead 20s. At Brandon Walls they are securing the 37
and 50 levels, and have got this week some fine stones of solid lead
ore from the lode about to be driven in. East Roman Gravels, 15s. to
17s. 6d.; mine continues to look well. Frongoch, 3 to 4; the mine
has sampled 150 tons blende and 100 tons lead for sale on the 30th,
Grogwinion, 2 to 3; Goginan, 1½ to 1¾; this mine has improved.
Ystwith ¼ to 1; Coed-y-Fedw, 1 to 1½; Sinclair Lead, 1 to 1½;
Derwent, 1½ to 1¾; East Craven Moor, ¾ to ¾; East Van, ¾ to 1;
Gorsedd and Merilyn, 2½ to 3; Herodsfoot, ¾ to ¾; Lead Hills, 2½
to 2¾; Goddard's Lead, 1 to 1½; North D'Eresby, ¾ to 1; Pandora,
¾ to ¾; Pennant, 4½ to 5; South Darren, 1½ to 1¾; West Lisburne,
1 to 1½; Kirk Michael, 1 to 1½; Great Holway, 5 to 5½; 30 tons of
lead ore sold this week at 12l. 3s. per ton—364l. 10s.; Langford
Silver and Copper, ½ to 1.

FOREIGN MINES.—Brazilian Gold, ¾ to 1½; Bratsberg, 1½ to 2½;
Birdseye Creek, 1½ to 1¾; Broadway Gold, 63 to 68; Canadian Cop-
per and Sulphur, 1½ to 1¾; Chili Gold, ¾ to ¾; Devala Central, ½ to ¾;
Devala-Moyar, 1½ to 1¾; Devala Provident, 1-16 to 3-16; Hoover
Hill, ¾ to ¾; Indian Glenrock, 1 to 1½; Indian Consolidated, ¾ to ¾;
Indian Phoenix, ¾ to ¾; Indian Trevelyan, ¾ to 1. La Plata,
2 to 2½; the directors have declared the usual dividend of
7½ cent. (9 cents per annum) out of the November profits, it
will be payable on Jan. 2, and leaves 64,504l. reserve fund. Mysore
Gold, ¾ to ¾; Rhodes Reef, ¾ to ¾; South-East Wynad, 1 to 1½;
South Indian, 1½ to 1¾; Tocopilla, 1 to 1½; Wynad Perseverance,
¾ to 1; Trambacherry, ¾ to 1½; Cape Copper, 48 to 49; Chontales,
¾ to ¾; Colorado, 2 to 2½; Copiapo, ¾ to ¾; Don Pedro, ¾ to ¾;
Eberhardt, ¾ to ¾; Frontino, 3 to 3½. Santa Barbara advices show
a loss for the month of October of 9l. 1s. 11d. The return of gold
was 1638l. 7s. 6d.; cost 1647l. 9s. 5d.; including 359l. 0s. 3d. on
capital account. St. John del Rey, 210 to 220; the gross profits on
the year's working has been 16,274l., the available profit out of which
a dividend of 5 per cent. has been declared—12,761l. English-Aus-
tralian, ¾ to 1; Michipicoten, 1½ to 1¾; New Quebrada, 4½ to 5;
Nouveau Monde, 10s. to 15; Panulillo, 6 to 6½; Richmond, 14½ to
14¾; Ruby, 2½ to 2¾; Tolima, 3½ to 4, cum div.; Kapanga, ¾ to ¾;
Placerville, 1 to 1½; Yuba River, par to ½ prem.

The Market for Mine Shares on the Stock Exchange has been very
quiet all the week, the majority of the dealers giving much more
attention to the holidays than to business, and it is improbable that
this feeling will be materially changed before the commencement of
the New Year, the prospects of which are unusually bright. The ad-
vance of 2l. 10s. in the copper standard at Truro, on Thursday, can-
not fail to have a favourable effect upon the price of copper mine
shares, but the rise is no doubt partially due to better produce. It
is often observable that the low produce ore from Devon Great Con-
sols forces down the average standard for copper, and conversely the
now improving produce at Devon Great Consols has made the ad-
vance in the average appear rather more than it really is. Both this
month and last the Devon Great Consols tonnage was 945, but whilst
the amount realised in November was but 1830l. 6s., it was on Thurs-
day 2082l. 1s. 6d., the difference exceeding 250l., or 6d. per share upon
the entire capital of the company. All copper mines, and especially
those in Tavistock and the neighbourhood, will reap the benefit of this
improvement, and amongst those concerned great encouragement is
felt. Referring to Thursday's ticketing a correspondent remarks that
the smelters were, as a matter of course, enabled to give the mines
somewhat better prices; but on closer examination of "the pro-
duces" of the several mines selling their ores on that day, and
seeing the considerable rise in the price of copper during the last
month, it would appear that the smelters could have well afforded
to have given very much better prices, and therefore the mining
companies have just reason to complain of this illiberality on the
part of the smelters—an entire monopoly.

Devon Great Consols, 7½ to 8, and reported to be in demand, with
an upward tendency, owing, no doubt, to the much better sale of
copper ore this month, which took place on Thursday last, realising
2082l. 1s. 6d. The levels, driving both east and west, are looking
promising for making early discoveries of ores.

South Caradon, 40 to 50, and stated to be more enquired for, on
account of the excellent sale of copper ores this week, realising
2579l. 19s. 6d., the best sale for many months past, and ought to
have a good profit.

South Devon United have been in improved demand during the
week at 1½ to 1¾. The sale this week of copper ores was 1135l. The
mine is decidedly looking much better, and there appears to be a
strong feeling amongst several shareholders to have the Wheal
Emma portion of the mines developed, where it is said great deposits
of copper ore will be found.

Wheal Crebor, 4 to 4½, and numerous transactions have been re-
ported, owing to the mine gradually improving, and the sale of ore
this week realising 1345l. 8s.

West Wheal Seton, 15 to 16; a few transactions have taken place
this week. The mines are said to be looking much better in the
bottom levels.

Devon United, ¾ to 1; as the sinking of the shaft is being worked
the lode produces good mineral, and the levels driving are improving
in appearance for ore and mundic (arsenic).
Cook's Kitchen, 26 to 27; are flatter, owing no doubt to the great
dissatisfaction expressed amongst the shareholders and others in
both Cornwall and London at the statement of accounts passed at
the last meeting of shareholders. It is affirmed that a heavy call
should have been made—at least 2l. to 3l. per share—and have
charged the accounts close up to the day of meeting; this would
only have been the true cost-book system.

South Wheal Francis have not been quite so firm this week at
16½ to 16¾; the mines continue to look equally as well, and the sales
of tin gradually increasing.

Drakewalls, ¾ to ¾; operations are being pushed on underground
in order to, at no distant date, increase the output of tin orestuff for
the steam and water stamps. A good sale of tin is expected will be
made next month.

Kit Hill, ¾ to ¾; the Great Kit Hill tunnel or adit level is being ad-
vanced with full force, and the shaft work on the top of the hill is
also being put in order.

Richmond, 13½ to 14½; the usual telegram from the mines at Eureka,
Nevada, states that the week's run was 36,000, from 911 tons of ore.
During the week the refinery produced doré bars to the value of
834,000. The assistant superintendent (Nov. 30) reports that the
300 north drift has been run 17 ft. in limestone along fissure; fa-
vourable ground for ore. The 400 north drift from 11 chamber has been run
14 ft. in limestone. The 500 west drift, from bottom of 15 chamber, has been
run 5 ft. in ledge matter, some ore. The 500 south 20° west drift, from bottom
of 15 chamber, has been run 34 ft. in ledge matter, some ore. The 500 east drift
from cave has been run 19 ft. along fissure in lead matter, some ore. The 600
rise near 14 chute has been extended 7 ft. in ledge matter, some ore. The 600
rise, 62 ft. east from fissure drift (650 level), has been extended 8 ft. in ledge
matter. The 1200 drift north from shaft has been run 34 ft. in quartzite, very soft
and fine; no appearance of limestone. The south drift on this level has been
run 9 ft. in hard quartzite; this is being used at the furnace for flux.

Ruby and Dunderberg, 2½ to 2¾; the weekly telegram has been
suspended temporarily during the shutting down of the furnace, but
that read at the general meeting stated, "Fair prospects, ore body
No. 2 north following No. 7 ore body below the 700," thus showing
that the ore does not give out as depth is attained. Indeed the re-
cent strikes in the Eureka Tunnel (close to the Dunderberg), on
Prospect Mountain, show that there is rich ore at great depth in
this locality.

Eureka (Nevada) Silver, ¾ to ¾; there is not much change to re-
port this week in the appearance of the mine. The drifts have been
extended, and that on the lowest level (300 ft. Bald Eagle) is de-
scribed as being in very hard rock. There is also no great change
in the Williamsburg, the shipments for the week being 16 tons.

Yuba River, par to 1/2 prem.; the favourable views of Mr. Edward Davies on the property of this company continue to excite the interest of shareholders. It is very generally assumed that he is an enthusiast of a very strong type, and that he attaches as much importance to a multiplication table as to a shaking table for separating marketable ore from its matrix; many are even disposed to regard his lucubrations as the outpourings of an unhealthy imagination, but in the face of all this they admit that the margin which he allows is so large that there will surely be profits sufficient to satisfy the most avaricious since if his estimate be twenty times too high his figures would still represent more than seven times the total nominal capital of the Yuba River Company. Leaving his estimates for his facts it appears that the property is in good working order, and ready to make returns. The Fall Creek Water and the Blue Tent Hydraulic Mines were two companies; indeed, there was a time when the canals and leats of the former were not in existence. The canals have now, however, been cut, the great lakes tapped and streams intersected, and the two companies consolidated into one. They are now as independent as any company he knows. I hardly ever go, he continues, to a mine, great or small, but that I hear the remark, and have to make it myself—"If a tunnel were driven in such and such a direction it would be the making of the mine." In Yuba, however, the much desired great tunnel of 1000 ft. long was planned in good time, and its driving executed satisfactorily. It is finished, and its uprise to the bed-rock under the auriferous gravel quickly carried out.

The Great Southern Mysore Gold Mining Company directors have issued a printed report, which has been forwarded to us marked in manuscript, "private and confidential," for what purpose it is difficult to imagine. It is stated that a manager of high credentials, and apparently all that could be wished for—Mr. Charles Bray—was engaged, and with an able assistant (Mr. Marsh) and an efficient staff of miners, proceeded to the field. Soon after his arrival his reports upon the property became most unfavourable. Moreover, he expressed himself confidently at a very early stage that there were neither true fissure veins nor any quartz containing gold in payable quantities either in the Great Southern Mysore property, or in any other part of the Mysore-Colar gold field, and on Sept. 26 he wrote—"The proposition of the board that I should consult with Dr. Atcherley as to the position, &c., of these new shafts, I consider as a great insult to 25 years' experience as a miner. . . . Neither have I been a student of geology for the last 25 years without being positive of the fact that paying mines are not to be found in the basaltic formations of this so-called gold field. . . . I tell you plainly that a paying mine is not to be found in the whole formation of this district." Now, such unequivocal condemnation from a man of Capt. Bray's experience must be most disheartening to all holding shares in the mines of Mysore, more especially as the opinions opposed to that of Capt. Bray are those of Dr. Atcherley and Mr. W. Bell Davies, whose experience as practical miners is not so well known to the public. What is required to reassure the shareholders is an explicit statement as to where these gentlemen obtained their mining experience; how long they have worked in or managed mines; and what were the names and locations of those mines, and the results obtained. There will, of course, be no difficulty in supplying this information; but at present there is such general distrust of "parchment engineers," that until the information is forthcoming the public will fear that Dr. Atcherley and Mr. Davies are not practical miners, and be inclined to regard Capt. Bray's opinion as the correct one, and to conclude that Indian gold mining, especially in the Mysore-Colar district, is a myth. As many millions of English capital is at stake, this is a matter which, in the interest of all parties, should be at once cleared up.

New Quebrada shares, 4 1/2 to 5 1/2; debentures, 95 to 100; the secretary writes:—"I am instructed by my board to say that in fulfilment of the promise made at the last general meeting of the shareholders, on July 28, an interim report will be published on the present state of the mines, smelting works, &c., in the ensuing month, which will furnish all necessary information in regard to the company's operations. Meanwhile, the shareholders are cautioned against any insinuations which may emanate from irresponsible sources.

Sentein, 3 to 4; it is reported that the dressing of the ores, which have been brought from the mine to the dressing-floors by the wire-rope tramway, can be carried on without interruption during the winter months.

Missouri, 10 to 10 1/2; advices received this week from the mines state that in the 315 North St. Clair the ground is worth 1 ton to the fathom. Stopping has been commenced here. At the old engine-shaft good progress has been made with the 270 level both north and south. The north level is very promising. The dressing of the low-grade ore has been proceeded with, and a small quantity of dressed ore smelted.

Brazilian Gold, 3 to 1 1/2; advices to hand indicate that the stamps will shortly commence work, and as there are large accumulations of ore, samples of which have, upon assay, yielded nearly 2 ozs. of gold per ton, large and remunerative returns are confidently looked for.

With a view to secure to the miners a fair price for tin ores a correspondent largely interested in mines of this class suggests that the sales should be made by auction. Iron sales by auction are, he says, to be carried out in the North of England and elsewhere, then why not tin mining companies in Cornwall adopt the same system. Nothing could be fairer than this both for the tin miners and tin smelters. The present mode of selling tin ores in Cornwall may be truly considered a disgrace both to the seller and buyer, and the sooner this system is altered the better.

In Lead Mine Shares there has again been very little doing, the prices of lead ore and of blende (upon which the profits of many of the lead mines are in a measure dependent) being still very low. This many of those interested in lead mines attribute to the mode in which lead ores are usually sold. In connection with this question a correspondent who is "A Large Shareholder in Cornish, Devon, and other Mines" writes:—"We have the monthly sales of copper ore published in your columns. Why do not pursers, managers, and secretaries send all sales of tin ores, lead ores, and blende to your Journal immediately the sales are effected? Why should managers, pursers, or directors keep this to themselves and not let shareholders and the public know what is going on? Most of the Cornish mines hold the meetings of shareholders every three or four months. During all this time the sales of tin ores are kept a secret to the officials. This should not be. Let all sales be communicated to the Cornish, Devon, and London mining newspapers, likewise weekly or fortnightly reports. Capital now diverted to foreign gold mine rubbish would soon find its way into our home, sound and well conducted mines, affording to shareholders early and, indeed, every information as to the position and prospects of each undertaking. I feel sure a word from you, Mr. Editor, to pursers, and managers, and directors will have the desired effect.

Minera Mines changed hands at 8 to 9; but very little business doing in them, although the sales of blende are increasing in amount.

Roman Gravel, 10 1/2 to 11 ex 5s per share dividend (3000%), payable this week to the shareholders, which makes now over 100,000, paid in dividends, independent of the heavy outlay for engines and machinery, &c., also paid for out of revenue. The mines are opening out well, and with an increase of the price of lead will pay increased dividends next year.

Great Laxey, 19 1/2 to 20 1/2, and in demand, owing no doubt to the somewhat increased price blende is at present bringing. It is now said that blende ores are likely to bring much better prices next year.

The Foxdale Mines (Isle of Man) are said to be looking well in the bottom levels.

Tankerville Great Consols, 1/2 to 3/4; the agent's report shows the steady and satisfactory progress now being made at these mines.

Leadhills Mines and Smelting Company's shares (61 fully paid) have been in good demand, at 2 1/2 to 3 1/2, and are reported to be scarce, and have every prospect, according to the manager's last report on the mines, of gradually advancing, seeing that there are 18 points being developed, and on an average are each producing about 3 1/2 tons of lead ore, or worth 25s. per fm. The 41, driving south, and the 71, driving south, and Wilson's shaft, sinking below the 20, are together producing about 20 tons of lead ore per fm., or worth about 200l. to 220l. per fm. But few lead mines in this country can show anything like this.

West Pateley, 3 to 1; the discovery in the 56 fm. level is said to be developing in a manner which induces the opinion that another rich body of ore has been tapped. It has already been noticed that the circumstances in which the present discovery was made assimilate with that which on a former occasion led to the opening out of

that good course of ore. The lode has during the week increased in width to 2 ft., and in value to 15 to 20 cwt. of lead ore per fm. An additional encouraging feature is the fact that the forebore of this level is now penetrating unexplored ground to surface, and that in advance of the end the company possesses no less than something like half a mile in extent. Ample and effective plant, machinery, and capacious dressing floors are completed—indeed that everything is ready to economically treat any increased output of ore resulting from the present discovery.

Pant-y-Mwyn, 1 1/2 to 2 1/2; the 22, driving west of Modlyn, still continues in a fine masterly lode, having, it is said, all the elements for producing vast quantities of ore.

British Silver-Lead, 1 to 1 1/2; the stopes and shaft continue as last reported. There is a nice pile of ore rich in silver ready for the dressing machinery, and by adopting boring plant and such powerful explosives as dynamite, 300 per cent. increase in returns can be obtained over and above hand labour, and at a relatively less cost.

From Blaen Caelan United Mines Mr. J. Pell (Dec. 23) telegraphs:—"Have followed the ore discovered 7 ft. south of the 30. Splendid ribs of lead going down solid below level."

North Herodfoot Company meeting will be held on Tuesday. The accounts to be submitted embrace seven four-week months, during which the expenditure has been 1476l. 11s. 3d., against ore sold, 160l. The net expenditure has, therefore, been 1316l. 11s. 3d. Unavoidable delays in starting the dressing machinery, and subsequently their inability to get hands to pick the ore, and the stormy weather, have combined to retard their sales, but they have a good pile of ore at surface, which they are dressing as speedily as possible, and expect to sample about 20 tons next week.

Ladywell Company meeting will be held on Wednesday. The directors, in their report, say:—"We regret to have to announce that the explorations since the last meeting have been unsuccessful. In accordance with the wishes then expressed we endeavoured, and with much difficulty succeeded, in borrowing 500l. upon the lease, plant, and machinery. This money having been expended, with the exception of about 50l., the only alternatives open to us are to wind-up or to raise more capital. The work at the mine has necessarily been stopped."

Lead Era Company meeting will be held on Jan. 7. The directors' report to be submitted states that the last balance-sheet was made up to the end of 1879, and since then the expenditure has been 1643l. 19s., almost all of which has been provided for by ourselves and the secretary. When to this statement they add that Capt. Ede takes all but a nominal portion of his salary in shares in the company at par, the shareholders can need no stronger proof of the estimation in which the management hold the undertaking, and they much regret the apathy that the general body of shareholders show to their interest. Capt. J. Anwyl Ede, in concluding a long report on the work done, says:—"The work done has increased my faith in our ultimate success almost to a certainty, as all the features of a rich mine in these measures are conspicuous at Lead Era; and it is generally believed, by those who know the mine, that to persevere a little longer will ensure success."

The Atlantic Copper Mining Company's secretary writes that the mines are developing, and have never stopped, and that no shares are to be had in the mine under par. It cannot be ascertained that there is any business doing in them, but if the secretary will state how many shares have been issued, what working capital the company possesses, and the price at which transactions have taken place during the week the name shall be re-inserted in the Share List. The quotation must be forwarded every Friday.

"The Canadian Pacific Railroad and the Schemes of the Syndicate," just issued by Messrs. Bates, Hendy, and Co., of Walbrook, will be found instructive reading to all pecuniarily interested in Canadian railway or industrial enterprise.

Referring to Diamond Mining, a Correspondent writes: The report of the North-east Diamond Company of Kimberley for the year ending Sept. 30 shows a credit to profit and loss account of 8000l. on a capital of 90,000l.—that is, a profit of nearly 9 per cent. The total amount realised for diamonds sold was 15,000l. A few good statements like this, says the Cape Times, would improve the Cape share market somewhat, but so many of the Kimberley companies have paid no dividends at all that the mania for shares has passed away, and small capitalists have become cautious. In view of the apparently satisfactory working of the North-east Company, it is instructive to find that another of the 'diamond companies, the Atlas of Bultfontein, has a credit at the bank for 355l., which, according to the authority already quoted, "seems to be the only available asset to work with." The report states that the promoters have a much greater stake in the company than the other shareholders combined, and that they are willing to show their belief in the ultimate success of the undertaking by facing the difficulty of removing the reef, and subscribing 5000l. if a similar sum is subscribed by the remainder of the shareholders for the purpose. It seems to be unlikely, however, that the shareholders will have sufficient confidence to act upon this suggestion.

At Truro Ticketing, on Thursday, 2763 tons of ore, of 6 1/2 average produce, and containing 180 tons 1 cwt. of fine copper, were sold for 10731l. 6s. 0d., being 3l. 17s. 6d. per ton of ore; 11s. 11d. per unit, or 59l. 12s. 0d. per ton of fine copper in the ore, and an average standard of 101l. 16s. Subjoined are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Dec. 1, 1121	...	496 1/4	0	...	43 19 6	...
22, 2763	...	101 16 0	...	6 1/2

Compared with the last sale, the advance has been in the standard 2l. 10s., and in the price per ton of ore about 3s. 3d.

GAS SHARES.—The principal business in these shares, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, has been—Bomby (Limited), 5 1/2; ditto, new, 4 1/2; British, 3 1/2; Commercial, 1 1/2; ditto, New Stock, 1 1/2; Continental Union (Limited), 2 1/2; to 2 1/2; ditto, new, (1869-72), 1 1/2; to 1 1/2; ditto, 7 per cent. pref., 2 1/2; to 2 1/2; European (Limited), 1 1/2; to 1 1/2; ditto, New, 5 1/2; to 5 1/2; Gas Light and Coke (A ordinary), 1 1/2; to 1 1/2; ditto, B, 4 per cent. max., 7 1/2; to 8 1/2; ditto, D, 10 per cent. pref., 21 1/2; to 21 1/2; ditto, 4 per cent. debenture stock, 10 1/2; to 10 1/2; London, 20 1/2; Monte Video, 15; Rio de Janeiro, 25 to 25 1/2; South Metropolitan, B, 17 1/2; to 17 1/2; Gas shares dull, and little doing. For closing prices see list on the last page of Journal.

INSURANCE SHARES have, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, been dealt in as follows:—City of London Fire (Limited), 1 1/2 to 1 1/2; Commercial Union, 2 1/2 to 2 1/2; Employers' Liability Assurance Corporation (Limited), 1 1/2; Fire Insurance Association (Limited), 4 1/2; Globe Marine (Limited), 2 to 2 1/2; Guardian, 72 to 72 1/2; Imperial Fire, 154; Indemnity Marine, 115 1/2 to 116 1/2; London and Provincial Marine (Limited), 4 to 4 1/2; London, 64 1/2; Merchants Marine (Limited), 1 1/2; North British and Mercantile, 168 1/2 to 169 1/2; Northern, 53 1/2; Sun Fire, 461 to 463; Thames and Mersey Marine (Limited), 13 1/2; Insurances idle. For closing prices see list on the last page of Journal.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. Abbott, of Tokenhouse-yard, are given in tabular form in the last page of Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course of business done to-day during official hours (11 to 3) Mr. Ferdinand R. Kirk, 5, Birch-lane, writes:—"Opening: There is again a semi-panic in the American markets, shares and bonds being wildly disposed of at ruinous prices. Wahash Preference yesterday 87 1/2, and a few days ago 84, can only be sold at 82 1/2. Erie can be bought at 84 1/2, Egyptian United are flat at 69 1/2, and the Preference at 91. Railways from 1/2 to 1/2 lower. Mason and Barry are quoted 21 1/2 to 21 1/2, but have been 22 1/2 to 23 in the course of the account. It may be useful to mention that the registered capital is 2,100,000l., in 10l. shares, and of this 1,851,640l. has been issued. The mines are situated in the south-east of Portugal, and produce sulphur and copper. Speculative buyers assert this will be another Rio Tinto. Richmond shares are offered at 14 1/2; the market appears to take an unfavourable view, and to anticipate a further fall. Wheel Crebrot, 3 1/2 to 4; the sale realised 134 1/2. Prince of Wales from being 3 1/2 to 3 1/2, have become active at 18s. to 20s. East Blue Hills, 14s. to 16s. After a long delay, owing to conflicting questions, the Stock Exchange committee have appointed next Wednesday a special settling-day for Quartz Hill. Business has been almost suspended the last hour, and the changes are insignificant. The Stock Exchange closes this evening until Tuesday, the 27th, when the settlement commences. Peruvian Sixes dropped to 19 1/2. Great Western are 136 1/2 to 137 again. Eberhardt, 9 1/2 to 10 1/2; Ruby, 2 1/2 to 2 1/2; Port Phillip, 4s. to 6s.

ARENDAL.—By advices this week the lode in Brown's shaft (which had lately fallen off) has again improved to 7 tons of copper ore per fathom. This being the deepest point in the mines, nearly 80 fms., makes it very important for depth. The new shaft, a considerable distance from the others, is worth 1 ton per fathom.

DEVON FRIENDSHIP.—The 30 west (under adit) is improved to 5 tons of arsenical mundic per fathom and good stones of copper ore. The adit end is worth 6 tons of arsenical mundic. Valuable discoveries of copper are looked for in driving the levels.

GREAT HOLWAY.—The 60 east is in a splendid course of lead and other important improvements are noticeable. The shares should command the attention of the investing public at present prices.

COED-Y-FEDW AND PANT-Y-BUARTH.—An important discovery is expected at the 107 yards level at Pant-y-Buarth, Rowland's cross-lode being in close proximity.

CARNARVONSHIRE GREAT CONSOLS.—The latest news from this mine is highly encouraging, the various stopes are producing in the aggregate over six tons of lead per fathom, and in the course of a week the dressing-floors will be at full work, when there is no doubt sales of lead will be resumed at the rate of 50 tons per month, and as the indications are favourable for further valuable discoveries in the deeper levels it is only reasonable to expect that the output of lead will be doubled, if not trebled, as development proceeds.

GREAT EAST VOR.—The latest report from this mine is that two lodes have been discovered, about 12 ft. apart, and each 12 in. wide. The tributaries, which know the district well, say that the lode is like that of the Great Wheel Vor. The opinion in the neighbourhood is strong that if no change in the lode should be discovered favourable results may be expected, and all the indications are in favour of the

continuance of the lode. There is said to be every probability, indeed, that the lode will become both richer and stronger in depth.

COPPER MINES.—We daily see it recorded that the price of fine copper is rising, and keeps firm at the advance, but when are the smelters to put up the price of ore in proportion? Surely this cannot be much longer delayed. After so long a period of depression the copper miners are entitled to the earliest consideration under so greatly an improved market for the metal.

The secretary of the Central Jagersfontein Diamond Mining Company (Limited) informs us that he has received a cablegram from their manager at Jagersfontein that shortly after commencing work a diamond of very fine quality, weighing 27 carats, was found in their claims.

Mr. John H. Tilly has been appointed liquidator of Hand's Afternoon Tea Company (Limited).

Mr. James Cooper has been appointed liquidator of the Thames and Channel Steamship Company (Limited).

CORNISH PUMPING-ENGINES.—The number of pumping-engines reported for November is 15. They have consumed 1167 tons of coal, and lifted 7.8 million tons of water 10 fms. high. The average duty of the whole is, therefore, 45,200,000 lbs. lifted 1 ft. high by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Engine	Millions	46.7
Carn Brea—50 and 90 in.
Dolcoath—85 in.
Mellancar—75 in.
West Basset—Thomas's 70 in.
West Tolgus—Richard's 70 in.
West Wusal Seton—Rule's 70 in.

Messrs. PIXLEY and ABELL.—GOLD: Previous orders having nearly been executed, the demand for the week has not been so active, and the only requirements have been for sovereigns for Egypt and South America; these, to the value of 190,000, have been withdrawn from the bank. The only rivals to report are two small amounts, 1800l. and 1320l. from the Brazils. The Teheran has taken 30,000l. to Alexandria.—SILVER: A small amount of bar silver was sold at the beginning of last week at 51 1/2d.; the market became firmer yesterday, owing to a slight demand for immediate shipment, and 51 1/2d. was obtained for the amount brought by the Cassendi. The rise here is doubtless in response to the higher value of money in India; the exchanges are also reported firmer, and telegraphic transfers have been quoted from 1s. 9d. per rupee. We have received since our last about 52,000l. from New York; 25,000l. from River Plate, per Cassendi—77,000l. The P. and O. steamer takes 48,000l. to India.

THE INDUSTRIAL RESOURCES OF IRELAND.—At the Statistical Society on Tuesday, Mr. G. Phillips Bevan read a paper on "The Industrial Resources of Ireland." He said that with few exceptions Irish industries had been declining. The coal deposits were estimated to be 182,260,000 available tons, but the annual outputs seldom reached and never exceeded 140,000 tons, though the annual consumption of coal in Ireland was nearly 3,000,000 tons. The yield of ironstone was rather on the increase, particularly in Antrim; but there were large deposits of argillaceous ore, equal to Welsh or Staffordshire, in the Connacht coal field, which might be utilised for steelmaking by the dephosphorising process. Copper and lead mining had terribly fallen off. China clay was more common than was generally believed. Building stones were of unequalled beauty and goodness, and yet stone was imported. Of the textile industries the linen and flax trades were the only ones which showed real prosperity. The woollen trade had lately been reviving. The cotton manufacture was but small, and showed a tendency to decrease. The jute trade was very local, and paper and fibrous materials made a very poor show. Mr. Bevan thought that more attention should be given to planting woods and forests, and said that a vast scope for industry existed in fisheries, the increased and improved supply of butter, the rearing of poultry, and the preserving of food. He suggested that a Royal Commission should exhaustively enquire into the nature and condition of Irish industries, that premiums or bounties should be offered, that the means of communication should be improved, and that the railway rates should be reduced. Some discussion followed, and the thanks of the meeting were passed to Mr. Bevan for his paper.

PATENT OFFICE LIBRARY.—A complete file of the *Mining Journal* can be examined daily at the Free Library of her Majesty's Commissioners of Patents, Southampton Buildings, Chancery-lane, and in making this announcement the opportunity may be taken of acknowledging the courtesy at all times shown to readers by Mr. Herbert John Allison, who all visitors to the library will be glad to learn has just been appointed to the office of librarian, to fill the vacancy caused by the death of Mr. Atkinson. For nearly 30 years Mr. Allison has been connected with the library, and from the careful and intelligent manner in which he has fulfilled the duties of deputy-librarian his promotion will give general satisfaction to the public, and amply justify Mr. H. Reader Lack, the clerk of the Commissioners, on the appointment he has made.

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Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

LEAD SMELTER.—Messrs. E. C. Goodhart and Co., Pencalwd Lead Works, near Swansea, not to be that their name is omitted from the list published in the Mining Journal of Nov. 19. It shall be included when the list is again inserted, and we repeat our request that firms whose names are omitted will at once forward details.

AVIS IMPORTANT.—AUX ABOUNNES ETRANGERS DU "MINING JOURNAL."—Le prix de l'abonnement au Mining Journal pour tous les pays de la Convention Postale Internationale est de 35 frs. le port compris. L'abonnement est payable par anticipation, ou par mandat postal international ou par autre mandat sur Londres. Le montant, si l'on le veut, sera touché à domicile la fin de l'an, mais en ce cas nous tirons à vue, sans avis, et sur le dos de la note. L'abonnement continuera sans avis contraire.

Received.—"Miner" (Bradford): We cannot give the information. Read the Journal, and consult a practical agent, or broker—"W. S." (Brixton)—"Old Reader" (New York)—"J. D."—"Stannum"—"Shareholder" (Wheat Jane)—"New Shareholder" (Leeds) should write to the secretary of the company.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, DECEMBER 24, 1881.

THE MINERS' CONFERENCE AT BIRMINGHAM.

The Conference of miners' delegates, which was brought to a conclusion at Birmingham on Saturday, was characterised by more than usual moderation, both in the resolutions proposed and in the speeches made in support of them. The influence of the President, Mr. BURT, M.P., whose views are usually expressed in terms conciliatory and free from personalities, was evidently such as to prevent anything of an inflammatory or impracticable character being introduced, so that the greatest harmony prevailed during the deliberations. One of the principal subjects in the programme for discussion was the sliding scale for regulating wages in several districts. The President, in his inaugural address, alluded to the concessions that had been obtained by the miners, and with some force remarked upon the fact that the masters' books could now be examined for the purpose of seeing what price they obtained for their coal, which a few years ago no person would have had the audacity to even hint at. Some districts were in favour of continuing the sliding scale, and others of either abolishing it altogether or having it modified; but Mr. BURT said before they abandoned the ground they had obtained they would do well to remember how easy it was to pull down and how laborious and slow was the work of building up. It would be well, therefore, for them not to abandon the sliding scale until they had something better to put in its place. Experience, in our opinion, has fully shown the great advantages derived by the miners by the adoption of the sliding scale, but from the colliery owners it has been desired to have a fixed minimum of wages, no matter what prices were obtained by them, but no maximum. Any scale fixed must be one equally balanced, there being no favour shown on one side or the other, for employers having conceded so much for the purpose of conciliating their workmen by allowing their books to be examined are not likely to go any further, and in all fairness they ought not to be asked to do so. It was, however, thought that the scale might be satisfactorily modified by a meeting between the representatives of the men and the executive of the Mining Association of Great Britain, and that the representatives of the two bodies should urge the necessity of a general advance of 10 per cent. in wages, in consideration of the improved state of trade. A resolution to this effect was proposed and carried, the mover expressing the opinion that competition amongst mine owners was detrimental to the maintenance of wages and profits, and the time was opportune for calling the attention of the employers to the fact that the wages of the workmen should be kept at what might be called a fair point. Another delegate thought that the employers should meet for the purpose of regulating trade and production in the interest of capital, and act as the Cleveland ironmasters had done, when they agreed with those in Scotland to reduce the output. Owners of coal mines it need scarcely be said would be very glad indeed could they sell their produce at a higher price than they are now obtaining, and would be much pleased at having the way pointed out to them by which such a desirable object could be effected. Cleveland and Scotland are the principal places where pig-iron is made, and they rule the markets, for in most other districts where pig-iron is made it is used at the works on the spot. But as regards coal it is entirely different. In some places steam coal is the principal product, in others that suitable for house and gas purposes, and these have to be sent by sea and railway to almost every part of the kingdom. It would, therefore, be simply impossible to have uniformity of price for such an article as coal, which is of such a varied description, besides the difference in the value.

But there is another thing that the miners representatives have overlooked in their desire to see all mineowners "a happy family"—that is the rate that has to be paid from different districts. A colliery owner, for instance, with his pits near to Newcastle, Sunderland, or any points close to the Tyne, has his coals carried to London at 5s. per ton by a screw steamer, whilst an owner in the West Riding has to pay 7s. 2d. to 7s. 4d. for the carriage of a ton to the same place by railway. It is evident that the interests of the two owners are the reverse of identical, and if the miners by any means can make them so we should strongly urge them to make the attempt. The President, in the course of his address, alluded to the legislation in reference to the use of powder in mines, which has certainly so far been most beneficial to the miner without injuring the interests of the employers, although the latter are strongly opposed to the interpretation put upon the clause in the Act of 1872 by the law officers of the Crown. That interpretation we consider is the only one that could be given, for the terms of the clause are by no means vague. In many districts it is certainly opposed to the interests of the men, who on the firing of a shot have to leave the mine, or that part of the mine at least where the blasting is taking place. Notwithstanding the loss that must necessarily accrue to the workmen by leaving off work, it is gratifying to find that the Conference upheld the decision come to by the Home Secretary, for a delegate from Yorkshire moved a resolution declaring that the interpretation put upon the clauses of the Mines' Regulation Act of 1872 by the law officers of the Crown relative to the use of blasting powder in mines was the only real meaning of the Act, and that the Home Secretary should be recommended to enforce its general adoption whenever the Act was applicable. The enforcement of the clause as interpreted by the Attorney-General and the Solicitor-General, although it may have the effect of lessening the output of a mine at certain times, must certainly contribute to the safety of the miners. We may, therefore, take it for granted that any attempt made to alter the clause on the part of mineowners will be successfully opposed on the part of the working miners, who are the persons really interested in the matter, and who are evidently ready to make some small sacrifice, by which they will not be placed in such danger from the firing of shots as they have been. One of the painful incidents with which persons residing in mining districts have frequently brought under their notice is the mode of conveyance of persons injured from the mine to their own homes. An old springless, jolting cart has been the ordinary mode of carrying a poor fellow in the agonies of death from where he has been working active and strong to the house from which he may never walk again. The excruciating torture thus inflicted is something terrible even to write of, yet even now this mode can be seen almost daily in some of our mining districts. In the case of one great calamity, where a large number of men were killed by an explosion and many more injured, we have seen close upon twenty of these carts, some with one and others with two victims, being dragged over stony and rutty roads, each

turn of the wheel giving so many shocks to the seriously injured and dying.

This important matter was taken up by the Conference in a most commendable manner, and a resolution was passed to the effect that it was necessary to insert a clause in the Mines' Act making it imperative upon owners to erect at every pit bank a house properly fitted with necessary appliances of every description to relieve the various kinds of accidents which are so frequent in mines, and that they should also provide some fitting conveyance to take home those who were overtaken by accidents in mines. At many mines there are now the most approved ambulances by which injured persons are taken to their homes in something like a Christian manner without unnecessary pain, and we hope that the proposals of the Conference will be carried where such have not been already adopted. An old proposal was also brought under the notice of the Congress, that of the federation of the various Miners' Associations, which has long been a favourite scheme of the miners' officials. A resolution was proposed and agreed to that a national federation or union of miners throughout the United Kingdom was highly desirable, so that all measures of a legislative nature might be more effective in the future than at present; but at the same time the federation should not be responsible for pecuniary aid in any labour dispute, but that the action in that direction should be merely recommendatory. A confederation formed on this basis would not be likely to do much harm, and probably not much good, for recommendation or advice given gratuitously, as a rule, is not considered of much value. One of the delegates, however, gave it as his opinion that the main object of the federation should be for political purposes, and the preservation of life and limb in the mines. The two objects are certainly the antipodes of each other, and our advice to the miners' representatives is to keep as free from politics as possible, and by so doing, in their efforts to promote hearty and desirable legislation for improving the position of the miner and making his work less liable to accidents than it has been, to endeavour to enlist the sympathy of gentlemen of all shades of political opinion in their favour. With respect to a meeting between the delegates of the Miners' Association, it was agreed that the secretary should write to the different Mineowners' Associations so as to ascertain whether they would meet the representatives of the men. The proceedings concluded with the usual votes of thanks. The Conference was one which we must say was in the highest degree creditable to those who took part in the proceedings, and shows that vulgar clap-trap and noisy declamation on the part of interested demagogues has been eliminated from those important gatherings, called together, not for speech making but for improving the condition of the miner. We may, therefore, look hopefully forward in the belief that strikes are things of the past, and that the men and their advisers desire a cordial and harmonious co-operation with employers, seeing that they have found that the interest of the one side is inseparable from the interest of the other.

THE PARLIAMENTARY COMMITTEE ON RAILWAY RATES FOR MINERALS, &c.

Owners of mines and those interested in the products of mines in all parts of the country have been looking forwards with great interest to the result of the labours of the Parliamentary Committee which sat for some time during last session with respect to the rates charged by railway companies for the conveyance of minerals as well as raw and manufactured material to and from different places. It was considered that the composition of the committee was such as to ensure a fair, unbiased, and satisfactory decision, and that there was no desire to have personal interests on one side more than the other represented. But it now appears that, by some means unknown to the uninitiated, the reverse of this was the case, and we have on the authority of Mr. BARNES, M.P. for East Derbyshire, one of the owners of the Grassmoor Colliery, in that county, and who was added to the committee after it was started, along with Mr. VIVIAN, M.P., and some other gentlemen. Indeed a grave charge has been brought against those who were responsible in the first instance for the formation of the committee by Mr. BARNES, who does not mince the matter in any way. It will be remembered that the member for Banbury, Mr. SAMUELSON, moved for a select committee to enquire into the rates and charges made by railways for minerals, &c., which was granted, one of the principal reasons being that the appointment of the Railway Commission expired at the end of next session, and that it was considered necessary that some steps should be taken to define the rights and privileges of railway companies before the commissioners were appointed. A committee was accordingly struck, and was composed of 22 members. Mr. BARNES with respect to it says—and we give his own words—"I was very much struck with it, for I saw at once it was what I should call a packed committee, the preponderance being given to the railway companies, so that the result must, therefore, be a railway result." This year he happened to be chairman of the Mining Association of Great Britain, and he and his colleagues were indignant at this, seeing that the mining interest paid higher rates for the conveyance of what they sent by railway than was charged for any other material. The Mining Association considered that they ought to be properly represented on the committee, and passed a resolution that Mr. BARNES and Mr. HUSSEY VIVIAN should try to get on the committee.

This is a straightforward statement, and shows how careful those who seek for the redress of grievances by means of a Parliamentary Committee should be in seeing that there is not a preponderance of their opponents placed upon it, whilst it also shows how necessary it is to have a body like that of the Mining Association to look after the interests of its members, and at all times prepared for action, even against Government officials. Mr. BARNES, however, informs us that he saw the Government, or at least the members of it, who might to some extent be considered responsible for the appointment of the members composing it; but, as he says, for taking such a course he was treated with the "cold shoulder," but in the end he got another member to propose that his own and Mr. VIVIAN's names should be placed on the Committee. At this time the Committee had had three or four sittings, but the perseverance of Mr. BARNES, backed as he was by the Mining Association and some members of Parliament, was successful, for the pressure brought to bear was sufficient to cause the Government to place four additional members on the Committee, which then consisted of 26 members. This was a number large enough certainly for carrying out the most important and stupendous of enquiries, and one would have thought that half the number would have been amply sufficient, but then the railway interest in the House of Commons is a most powerful one.

The committee it appears sat two and some portion of it three days a week, and according to Mr. BARNES the evidence went to show that the railway had evidently gone beyond their powers. The evidence was far from being exhausted, and the probability is that the committee will sit to the end of next session. The railway companies, Mr. BARNES informs us, have the power of charging a local rate upon each line, and this, of course, could be made to militate against the interest of any district. But what mineowners required was through rates from one place to another in passing over more lines than one, with a moderate charge for terminal charges. As an instance of the unfairness of the charges, Mr. BARNES specially notes the case of South Wales and the evidence he elicited from a witness from there. Minerals were carried by railway from South Wales to North Wales at half the charge from North Wales to other places. This the witness stated was for the benefit of the public, but he rather demurred when Mr. BARNES put the question to him whether supposing Downlais was in North Wales he would like South Wales to come through North Wales at the same rate? The witness said he was not quite sure that he would. The rates charged by railway companies affect materially all our great industries, and gives one district a great advantage over another, without considering the geographical position of the two. No one will deny the right of railway companies to have a fair profit as carriers, but there should be a limit to that in the public interest. But it has frequently happened that committees of the House of Commons, for some reason probably well known to the parties interested, have given decisions in favour of railway companies against what has been admitted would have been of advantage to the public. A case of this kind took place a

few years ago which was strongly commented upon. The Great Eastern Railway Company asked for powers to construct a mineral line of single rails from the West Riding of Yorkshire to join the main system near to Peterborough. The line owing to its particularly easy gradients was only to cost some 6000*l.* a mile, and the company inserted a clause in the Bill by which the coal was to be carried at a farthing per ton per mile, or not much more than one-half of what was charged by the Great Northern. This would have made coal about 2s. per ton cheaper to the inhabitants of the East End of London. The committee, however, refused to pass the preamble of the Bill on the ground that it would be most unfair to have a line so cheaply formed, and carrying minerals at such a low rate, running almost parallel with the Great Northern, which was such a costly undertaking. Here the public interest was sacrificed to that of a powerful railway company having many friends and shareholders in Parliament. It is only too probable also that without the addition made to the committee on railway rates through the active exertions of Mr. BARNES the ultimate report of that committee would be far less satisfactory than it is now likely to be, despite the strong railway element which it contains.

OUR RAILS IN BRITISH INDIA.

There are some signs of a change in British policy in the Far East. In old times the English had to fight almost for bare existence in India, and the battle cry was "Conquer or die." This system of fighting for existence and standing ground became a traditional policy with old Anglo-Indians; and even so recently as 1857-8 it had again to be resorted to. But in the last quarter of a century our policy in the East has been gradually changing; utilitarian ideas are coming to the front, and Anglo-Indian statesmen are beginning to act upon the, after all, salutary principle that our true policy is to turn the natural resources of India to the best possible account. The establishment of a network of guaranteed Indian railways was a great stride onward in this direction. We are rather afraid that it must be admitted that these railways were undertaken, in the first instance, to a large extent for strategic reasons, as it was argued, truly enough, that they would facilitate the rapid movement of troops and material of war, and increase by consequence our hold upon the people of India. It was natural that such an idea as this should acquire a prominent place in Anglo-Indian policy immediately after the dreadful mutiny of 1857-8; but now that we have enjoyed nearly 25 years of unbroken internal tranquility in our Indian Empire, there is a growing disposition to turn the railways of British India to increased commercial account, and to utilise them as valuable aids in developing the agriculture and general industry of our great dependency.

Another circumstance which is eminently calculated to foster the growing commerce of British India is the completion of the Suez Canal. When the Indian mutiny, with all its attendant horrors, was about to break out a quarter of a century since, even an engineer of the deserved eminence of ROBERT STEPHENSON expressed doubts whether the Suez Canal could ever be completed, and whether—even if by unlooked for good fortune it could be completed—it could be afterwards kept open. But the genius and perseverance of M. DE LESSEPS triumphed over every obstacle; the Suez Canal was opened in the autumn of 1869, and the steadily increasing traffic which passes through it proves beyond all doubt that it is a great success, and that it is exercising a mighty influence for good upon our vast Eastern Empire. The wheat and other products of British India can now be delivered in Europe and Great Britain in a far cheaper and more rapid fashion than formerly; and the effect upon the production of British India in every form must be very marked and important. Even now our Indian Empire is imperfectly supplied with railways. The principal towns may be connected fairly well by the great arterial lines which have been constructed; but if the resources of British India are ever to be fully developed, a large number of feeders and branches must still be constructed. Indian public men are well aware of this; and in view of the present satisfactory condition of Indian affairs generally, we anticipate an improved demand for our rails during the next few years on Anglo-Indian account.

THE FATAL COLLIERY EXPLOSION IN LANCASHIRE.

It has been reserved for the last month to record the most serious colliery explosion which has taken place during the year, the result of which will be the loss of between 40 and 50 lives. In nearly all the previous explosions this year there was not much difficulty in tracing the causes, for blasting and naked lights were the agents of destruction, as they have been in nearly all great mining catastrophes. At the Abram Colliery, where the explosion took place on Monday last, it appears that great precautions were taken to prevent accidents from accumulations of gas. Blasting was not allowed; safety-lamps, we are told, were in general use, whilst the ventilation was obtained by means of a powerful fan, so that apparently there was nothing in the working that under ordinary circumstances could contribute to an explosion. These are the facts, and they appear to have puzzled the mining engineers, for with such precautions they have been unable to express an opinion as to how the fatality occurred. On some former occasion, for want of a better, it has been usual to attribute the firing of the explosive mixture to the recklessness of some collier, who had either recklessly opened his lamp or struck it with his pick. The Wigan district, it may be said, has been the scene of similar disasters, for the Arley as well as other seams give off a good deal of gas, and at most of the mines powder was used, and at some of them naked lights were carried about. The explosion took place at noon, the time when the full number of men would be at work, and everything in full operation, there being 70 men engaged in connection with the yard seam, in which the explosion took place, and of these nearly 30 were brought to bank more or less injured, thanks to the bravery shown by a number of men who at once volunteered to go down the pit in the hope of saving any of the men that might have escaped the death-dealing blast. But it is a characteristic of our miners that they are always ready to run any risk in endeavouring to save the lives of those who may be in a mine after an explosion, and many volunteers have sacrificed their own lives in endeavouring to save the lives of others. The explosion at the Abram Colliery, however, shows that explosions will take place where there is no blasting, where there is no furnaces at the bottom by which the return air may come in contact, and where the best of safety-lamps are used in all parts of a mine. And this it is which puzzles the mining engineers to account for the explosion. Gas of course will accumulate, and with the air form an explosive mixture, but then there must be a naked light to set it on fire, and cause the explosion.

Now, at most collieries the lamps are in charge of a man who has to keep them clean and in good workable condition, and not giving out one that is in the slightest degree defective. But the test applied for discovering any defect is that of the eye only, and that has been found most unreliable, even in the case of experienced lampmen. Indeed, it has been found by a series of experiments conducted by Mr. T. W. EMBLETON, one of the oldest and ablest mining engineers in Yorkshire, and the President of the Midland Institute of Mining Engineers that the eye could not be relied upon, and the ordinary mode of testing a lamp was such that many really unsafe lamps were put into the hands of miners as reliable, and believed to be so by the man who gave them out. Some of the best safety-lamps made and given out as perfect upon being placed in an explosive mixture gave way under the test, and it is in this direction, we consider, that the cause of the recent explosion may be looked for. With the information at present obtained there is no reason to doubt that a lamp from some cause or other was defective and led to the serious calamity which has overtaken so many men. It should, therefore, be generally known amongst those having the charge of mines that there is at present only one really sure mode of testing lamps, and that is by plunging them into a bath of gas. If they stand that ordeal then they may be surely relied upon. In some of the most fiery mines in Yorkshire, where the coal gave off a great deal of gas, the bath has been found to be the simplest and most efficient safeguard by which the safety of a mine can be ensured from an explosion. We hope, therefore, that some of the lamps brought out of the workings of the Abram Colliery will be tested

in the manner we have pointed out, as it is evident that a lamp was directly connected with the explosion. We are also glad to find that no appeal to the public will be necessary for the support of the sufferers, for the unfortunate deceased it appears were members of the association established for meeting such cases. We shall, however, look forward with some interest to the evidence that will be given before the Coroner, and in all probability shall revert to the subject again, as the explosion has taken place under such exceptional circumstances.

FOREIGN GOLD MINES—THE HAVEN AND CARTA PARA COMPANIES.

The petitions for winding up these companies have both been dismissed with costs, the petitioners having failed in both instances to substantiate their allegations. In the case of the Carta Para four barristers were retained in support of the winding up, and seven in opposition, the petitioner being the holder of 425 shares, and the principal grounds upon which he sought a winding-up order were that, as he alleged, the directors had improperly refused to allot the full number of shares applied for, and had issued a large number of shares to their own friends and to other persons upon many of which only 1s. per share had been paid, though the sums which ought to have been paid were 1s. on application, 4s. on allotment, and 5s. more upon a subsequent call; that many of such persons were in insolvent circumstances; that the directors had incurred expenses which were in excess of the legitimate requirements of the company; that the statements contained in the prospectus were untrue; and generally that there was no expectation the company could profitably carry on its business. In opposition to the winding up it was contended that not a single debt had been alleged as against the company, and that the petition was demurrable as having alleged no sufficient ground for a winding-up order.

The difficulty in the way of individual shareholders obtaining such evidence in support of allegations of this character as will be accepted in a court of justice is well known, and many facts which render the position of the money-supplying shareholders absolutely hopeless are of a nature that cannot be taken cognisance by a judge. The statement for example 34,830 shares have been issued out of a capital of 50,000 is upon the face of it reassuring; yet it may happen that so large a proportion of the shares issued has been absorbed to satisfy the claims of the vendors that the amount available for working capital cannot reasonably be expected to earn profits on the 34,830 capital entitled to participate in any distribution, and the result even the limited working capital which nominally exists is expended in directors' fees, management and travelling expenses, office rent, and the like, and little, if any, reaches the mines at all—certainly not sufficient to prove their utter worthlessness, which under the circumstances would have to be proved to justify a winding-up order. In dismissing the Carta Para petition Vice-Chancellor Hall said that if the position of the company had been such as to show that it had been a bubble from the first, and that it could not under any circumstances be a success, he should have had no hesitation in making a winding-up order. But this was not the case. He could not collect that there was no reasonable prospect of the company going on. The statements of the petition were vague, and amounted for the present purpose to little or nothing. It was said that a number of shares had been issued to the friends of the directors, but this was not a statement entitled to much weight upon a petition of this kind. Of course persons connected with the floating of companies got their friends to take up shares, otherwise many companies would never be floated at all. As to general statements about improper expenditure and the absence of any expectation that the company could ever carry on its business with success, his lordship could only attend to them so far as there were special averments in support of them; and without giving any opinion as to whether or not the company would ultimately be successful there was certainly not enough to support the general allegations of the petitioner, or to show that the company ought to be wound-up.

The petitioners in the case of the Haven Gold Mining Company undertook to prove that the company was a "bubble and a sham," which, as the property is 12,000 miles distant, was neither an easy nor an enviable task—the sale at the price of 30,000l. of property originally purchased for 2l. not necessarily amounting to fraud. The petitioners were—one, the holder of 100 shares, the other of 50 in the company, stated that the subscribed on the faith of certain statements in the prospectus, and alleged that the company had no title to the property purported to have been acquired by them; that it was, in fact, claimed and was being worked by persons in New Zealand; that the directors had not completed the purchase; that they were unable to carry out the objects of the company; that the company had not commenced, and could not commence, business; that it was promoted solely in the interest of the promoters, and could not be carried on to the advantage of the shareholders; that many statements in the prospectus were misleading, and that the company was a "bubble and a sham." In support of the petition some strong comments were made on the remarkable dealings which had taken place with the land. Originally the subject of an agreement with one or more New Zealand Maoris, or savages, who got, or were said to have got, 2l. paid, with an annual rent of 20l., it passed through various hands at prices rising gradually from 300l. to 5000l., 16,000l., and ultimately to 30,000l., for which it was purchased by trustees on behalf of the present company, 20,000l. of the purchase-money to be paid in cash, and 10,000l. in fully paid-up shares. They pointed out many discrepancies in the description of the property contained in the several agreements, and contended that the prospectus was misleading, inasmuch as it purported, by reference to documents, to deal with 3½ acres of land, whereas the land actually acquired was little over 1 acre in extent. They asked for the order on the grounds that the whole substratum of the company having been gone, and the scheme having been concocted in fraud, it was just and equitable that the company should be wound-up.

The decision of Vice-Chancellor Bacon was unequivocally in favour of the company. The hearing of the petition occupied several days, and at the conclusion of the arguments the Vice-Chancellor said that there was not a vestige of foundation for the imputations of fraud which had been made against the promoters and directors of the company. They may have been over sanguine or misled; their expectations may not have been realised, but these circumstances did not amount to fraud. The documents had been referred to as proofs of exaggerated value. But whether the value of the property was exaggerated or not the Court could not undertake to say; the price paid may have been too large, but that did not necessarily imply fraud. Comments had been made on the inaccuracies in the deeds and maps. But the lands were on the register of the country, which would show with perfect accuracy their extent and position. It had been said that there were many and misleading statements in the prospectus, and that the company was a bubble and a fraud. It was a settled rule that if a man came into Court alleging fraud without sufficient proof his application must be dismissed. Here there was no evidence of anything misleading in the prospectus as to the future prospects of the company; the shareholders themselves had resolved by a large majority that they would go on and try their fortune further. It was not the practice of the Court to interfere in the domestic management of companies, and as the charges brought forward on this occasion totally failed the petition must be dismissed with costs.

Since the above was written Messrs. Beall and Co., of Queen Victoria-street, forward telegram which they have sent to Auckland and reply stating that "Eicke's Haven titles are bad," and write—Annexed we hand copy of telegram sent to New Zealand on Dec. 13, and also the reply received by us from the authorities in the colony forwarded from Auckland on Dec. 16. While the matter is sub-judice it would be unbecoming in us to comment on the judgment of Vice-Chancellor Bacon dismissing the petition; but so satisfied are our clients that justice has not been done that notice of appeal was immediately given and by order of the Court of Appeal made on the same day the appeal was advanced and set down for hearing on the first day of the sittings after the present short vacation. Under these circumstances we ask you and your readers to suspend your judgment until the matter be definitely disposed of and a strongly consti-

tuted tribunal has had an opportunity of reviewing the entire proceedings and the evidence supporting them and pronouncing final judgment thereon.

SOUTH-WEST BOARD OF MINING EXAMINERS.

A special Sessions of the South-West Board of Mining Examiners was held at the Guildhall, Bristol, on Dec. 13 and following days, for testing the aptitude and proficiency of candidates for Certificates of Competency as Colliery Managers under the Coal Mines Regulation Act, 1872. The examiners were—Messrs. Wm. Needham, M.E., Newport; C. A. Harrison, M.E., Fishponds, Bristol; and J. T. Thomas, M.E., Coleford. On Tuesday (Dec. 13) thirteen applicants presented their official authorisation from the Secretary of State, as per Section 29 of the Act; and, having by their testimonials satisfied the examiners of their moral reputation and experience, they were instructed to proceed with their papers, which were thus arranged—

	No. of questions.	Maximum degree merit.
1.—Subject, Arithmetic.....	8	95 marks.
2.—" Surveying and geology ..	8	110 "
On Wednesday, 14th, from 9.30 A.M. to 5 P.M.		
3.—Subject, Ventilation	10	150 marks.
4.—" Practical mining	10	150 "
5.—" Engineering	8	95 "

On the whole there are 44 questions, each question having a maximum, intermediate, and minimum ratio of merit, as 15, 10, 5; the lowest standard allowed on the five papers being 300 out of a possible 600 marks. On Thursday the result of the previous day's papers was announced to the several candidates. Four were below the standard, and consequently retired; nine entered for their "viva voce" examination, and were separately interrogated as to their respective papers and other important questions relative to the atmosphere of a coal mine, effective and defective ventilation, and the daily operations and supervision of fiery and non-fiery collieries. On Friday the members of the board met for general business, but more especially to receive the report of the examiners, when there were present—Messrs. W. B. Nash, Bath (Chairman); E. J. Grice, Newport (Vice-Chairman); C. A. Harrison, M.E., Bristol; W. Needham, M.E., Newport; J. T. Thomas, M.E., Coleford; Wm. Burchall, miner, Beaufort; David Williams, miner, Rhymney; and T. Sweetman, miner, Ebbw Vale; also, Mr. R. Donald Bain, Her Majesty's Inspector of Mines for the South-Western district. The ordinary proceedings of the quarterly meeting held Sept. 15 having been confirmed the examination papers of each candidate, with analysis thereof, were placed before the board, and according to their score and on the recommendation of the examiners, it was unanimously agreed that the following gentlemen were entitled to their Certificates of Competency as Colliery Managers from the Secretary of State:—

1.—Mr. E. L. Owen, Somerset Chambers, Bristol	470 marks
2.—T. H. Dowdeswell, Merthyr Vale.....	460 "
3.—W. J. Davies, Cwmbran	440 "
4.—E. J. Phillips, Celynen Colliery, Abercarn ..	400 "
5.—J. G. Elliot, Cwmaman, Aberdare	375 "
6.—Thos. Lewis, Pentre Rhondda	355 "
7.—Thos. Thomas, Energlyn, Caerphilly	315 "

Finally resolved and agreed that the next quarterly meeting of the board shall be held in the Guildhall, Bristol, on March 28, at 12 o'clock noon, and with complimentary vote to the Chairman the proceedings of this very successful special sessions closed.

ROYAL SCHOOL OF MINES.—The ninth annual dinner, attended by the gentlemen connected with this institution, took place on Friday, when between 60 and 70 of the professors and students, past and present, of the school met together at the Criterion Restaurant. Mr. P. C. Gilchrist presided, and among those present were Sir Philip Cunliffe Owen, Profs. Huxley, Judd, and Chandler Roberts, Alderman Cotton, M.P., Mr. Norman Lockyer, F.R.S., General Martin, Colonel Festing, Mr. Rathbone, Mr. Seymour, Mr. C. Mathey, Mr. E. Ridesdale, Mr. E. Best, Mr. K. Smith, Mr. F. W. Danby, and Mr. E. C. Cotton, honorary secretary. Returning thanks for the toast of the House of Commons, which had been proposed by Mr. Lockyer, Mr. Alderman Cotton assured the company that the branch of the Legislature with which he was connected would never be niggardly in its support of scientific teaching and enterprise. The toast of "Past and Present Professors" having been proposed, Prof. Huxley replied in a humorous speech, in which he reviewed the careers of various teachers in the School of Mines during the last 27 years. Referring to Dr. Lyon Playfair, who at one time filled the chair of chemistry, but who had since taken to politics and was now a chairman of committees in the House of Commons, he observed that during the last session of Parliament Dr. Playfair had discovered how difficult it was to prevent that new substance known as the organic disintegrating or Irish Radical from exploding. Whenever endeavours were made to bring this substance into combination with other substances, especially when the subject of rent was mentioned, like some chemical matter known to his hearers, the elements composing it had invariably resolved themselves into "NO." The learned professor concluded his remarks by eulogising the present efficiency of the school, saying that it had made great progress in the 27 years during which he had known it, and laying special stress on the fact that it now placed a sound training in mathematics within the reach of its students as well as practical instruction.

IRISH SLATE AND STONE QUARRIES.—A report has been very recently made on the Trabolgan Quarries, the property of Lord Fermoy, near Queenstown Harbour, by Capt. W. Thomas, from which we take the following extracts:—"Some years ago a superficial excavation was made on a mass of slate-rock a little to the east of the avenue to Trabolgan House. The direction of this slate-bed is about east and west; it runs into a hill going east, and as the ground rises fast in that direction it greatly facilitates the advantageous working of the quarry by a succession of galleries, while the debris can be removed by a tramway in the valley adjoining, and also the drainage of waters from the interior of the quarry. The roofing slate, now seen in the rubbish from the out-crosc or surface rock, is of good quality and texture and free from iron pyrites. The colour is all that could be desired. There is an excellent road to a safe and convenient shipping port, which is within a short distance of the quarry; and the quarry, if perfectly opened, appears calculated to yield an unlimited quantity of first quality roofing slate. So that builders in Cork, &c., need not look to Wales for an article that may be supplied at home. Parallel with the slate veins, and also running about east and west, a large dyke of green stone porphyritic rock was discovered in sinking a well. This dyke or quarry would yield a large supply of paving stones of the hardest and most durable character; and the chippings from dressing the paving sets would supply first quality and the most durable macadamised road material ready for use. A supply, therefore, of roofing slate and paving and building stones for Cork and other towns may be obtained, as it were, next door, instead of importing from Wales. Besides, the development of these quarries would be a practical and common-sense way of supporting home manufactures, and would no doubt eventually become a great source of wealth.

STEELMAKING IN SCOTLAND.—At the Paisley Philosophical Institution last week "Recent Progress in the Manufacture and Use of Steel" was made the subject of a lecture by Mr. John Mayer, F.C.S., Government Lecturer on Science, Glasgow, and in discussing it he mentioned some interesting facts in regard to the extent to which steelmaking is now pursued in Scotland. The two establishments owned by the Steel Company of Scotland—Newton and Blochairn—were now turning out about 150,000 tons of mild steel per annum, whereas the total make of that material in the United Kingdom was about 250,000 tons, which was certainly a very large quantity. Siemens steel was also made on a somewhat extensive scale at several other works in Lanarkshire, and crucible or pot steel was being made at three establishments on the same system as that pursued at Sheffield, but chiefly for tools and similar appliances. The lecturer mentioned that under Lloyd's survey there was between 200,000 and 300,000 tons of steel shipping under construction in the United King-

dom, a large portion of which was being built of Scotch mild steel, and it was very probable that 80,000 or 90,000 tons of steel shipping would be turned out on the Clyde in the course of the present year.

THE FESTINIOG SLATE QUARRIES AND THE MINES REGULATION ACT.

An important question is at issue between the Festiniog Quarry owners and the Government Inspector for the district—Dr. Le Neve Foster—and on Tuesday a deputation, including the Hon. Evelyn Ashley, M.P., and Messrs. Dunlop and Greaves, representing the former, waited upon the Home Secretary for the purpose of calling the attention of the Government to the working of one of the sections of the Metalliferous Mines Regulation Act, 1872, and petitions from nearly 3000 quarrymen of the district were presented in favour of the objects of the deputation. It was stated that the slate quarries of the Festiniog district, unlike those of the Carnarvonshire and other districts, which were open quarries, were worked under cover, and were, therefore, subject to the regulations of the Metalliferous Mines Regulation Act of 1872, which, by the second general rule, provided that gunpowder, or other inflammable substance, shall only be used underground in the mine as follows:—"It shall not be stored in the mine;" "it shall not be taken into the mine except in a case or canister containing not more than 4 lbs.;" and "a workman shall not have in use at one time in one place more than one of such cases or canisters." The Act, however, contained the provision that the observance of the general rules should be only "so far as is reasonably practicable." It required from 10 to 20 lbs. of gunpowder occasionally in a single blasting operation in the slate quarries, and the regulation restricting the quantity to a maximum of 4 lbs. made it impossible to successfully work the quarries or mines in the Festiniog district, where the practice had been to have the gunpowder packed in kegs of 25 lbs. each. The late Inspector of the district, Mr. Fanning Evans, recognising the impossibility of carrying on the works if the 4 lbs. maximum were insisted upon, allowed the particular section of the Act to remain in abeyance, but a new Inspector having been appointed—Dr. Le Neve Foster—the proprietors of the quarries were called upon to comply with the provisions of the Act.

In reply to representations made to the Home Office, the chief inspector, Mr. Dickinson, of Manchester, was instructed to enquire into the matter, and he reported that "having carefully considered the practical points, the conclusion at which I arrive is that with due defence to other views which may be taken by the Secretary of State, and subject to such modifications as may appear expedient from suggestions by the Inspector of Mines of the district, the limitation to 4 lb. cases or canisters is not in all respects applicable to slate mines, and I incline to the opinion that if the matter were brought before a court of equity it would be held that the letter of the law in this respect is governed by the words requiring the observance of the general rules to be only so far as is reasonably practicable." Dr. Le Neve Foster, however, still insisted upon the rule being put in force, and the deputation urged the importance of the Home Secretary giving instructions that the matter be allowed to remain in abeyance, at any rate until the meeting of Parliament, when it was proposed to ask Parliament to declare that the particular provision of the Metalliferous Mines Regulation Act, 1872, should not apply to slate mines. The Home Secretary very naturally said that he could not instruct their Inspectors not to carry out the duties imposed upon them by Acts of Parliament, but would confer with the Inspector. That it has been customary in the Festiniog district to use large charges of explosives in the slate mines is beyond question, but that by no means proves that the limitations contained in the Act are unnecessary. The object of the provision was to protect the lives and limbs of the workmen, and it is really difficult to comprehend why slate mines, of all others, should claim exemption; the rock is more easily wrought than many minerals, and it should fairly be left in the hands of the Government Inspector to enforce the law, more especially as Dr. Le Neve Foster has had ample experience amongst the metalliferous mines of Cornwall, Devon, and elsewhere to enable him to determine whether or not the Act of Parliament can reasonably be enforced.

ELECTRIC LIGHTING FOR MINES.—In a paper read before the Institution of Engineers and Shipbuilders in Glasgow, on Tuesday evening, by Principal Jamieson, of the College of Science and Arts, it was stated that 1400 or 1500 lamps for electric lighting had been fitted up in different large steamers, including H.M.S. Inflexible and some first-class passenger steamers. He described in some detail the construction of the Swan lamp and the manner in which the 117 lamps on board the Servia were fitted up, at a cost of about 1000l., or eight guineas per lamp. He remarked that as yet the electric light was only used in two collieries—at Earnock and Risca. The mineowners were very cautious, and were waiting to see whether the experiments at these two places proved successful. The lamp used in these collieries was as safe as possible in the most explosive mixture, but it had its drawbacks, and he did not think that in its present form it had any great future before it.

BEAUMONT COMPRESSED AIR LOCOMOTIVE COMPANY.—The second general meeting of shareholders was held on Saturday at the office, Victoria-street, Westminster, the Right Hon. Henry Cecil Raikes in the chair. The report stated that the Beaumont engine had been passed by the Board of Trade, and its suitability for tramways satisfactorily demonstrated in the daily working of traffic on the Stratford and Leytonstone line, under contract with the North Metropolitan Tramway Company. The working result showed that with a full service of cars the coal consumption for compressing air at the depot would be less than for a steam tramway locomotive. Combined engines and cars were to be substituted for detached engines, the system being specially applicable to the former. The report also states that agreements had been signed for disposal of some of the foreign patents. The Chairman moved the adoption of the report, which was seconded by a shareholder, and carried. Messrs. Fraser and Watts were re-elected auditors for the ensuing year.

NEW GAS ENGINE.—The lightness, compactness, regularity, and safety of Clerk's patent gas engine exhibited at the Paris Electrical Exhibition by Messrs. Thomson, Sterne, and Co., of Glasgow, were referred to in the lecture of Mr. W. H. Preece, F.R.S., at the Society of Arts. The engine is extremely simple, has no gearing wheels of any kind, and is noiseless in action, and these are good recommendations in its favour. An ignition is made at every revolution, instead of one ignition in every two or more revolutions, as is usually the case in gas engines, and the power is, therefore, much greater for the size of the engine. By a special and simple arrangement all tendency to back ignition is avoided, and the engine may be worked up to its full available power without irregularity. Gas engines being free from the dangers of boilers, or the waste of energy in chimneys, are destined to be extensively used in the future; and Clerk's patent being well adapted for general use can scarcely fail to commend itself to the public.

PLACERVILLE GOLD QUARTZ.—Mr. W. A. Jones, for seven years underground foreman of the Eureka Consolidated, at Eureka, Nevada, has been appointed superintendent of this mine in the place of Mr. Thomas, who died a few weeks ago.

MINE INSPECTION IN OHIO.—The report of Mr. A. Roy, the State Inspector of Mines for 1881, has just been issued. The output of coal appears to be increasing at the rate of about 1,000,000 tons per annum; the figures for 1880 reaching 7,000,000 tons, whilst during the present year the output will not be less than 8,250,000 tons. The mines have been comparatively free from strikes, suspensions, and lock-outs during the year. The only drawback is that now being felt in a lack of railroad cars in every mining district to ship the coal from the mines to the markets. Since the introduction of inspection the diminution of casualties has been most satisfactory. In 1874 there was one fatal accident for each 108,919 tons mined; in 1881 there were 283,621 tons mined for each fatal accident. An assistant

inspector has been appointed, and both chief and assistant appear to have worked energetically and well.

Registration of New Companies.

The following joint-stock companies have been duly registered:

BUSHEY HYDROTHERAPEUTIC COMPANY (Limited).—Capital 100,000*l.*, in shares of 10*l.*. To acquire land and erect thereon a hydrotherapeutic establishment. The subscribers (who take one share each) are—D. H. Small, 3, Stanley Gardens; J. McDonald, Upper Norwood; H. W. Coyne, Watford; G. Slight, 3, Clifford-street; G. Thomas, South Norwood; H. S. Wild, Bushey Hill; J. Smith, Norwood.

LAND CORPORATION OF CANADA (Limited).—Capital, 500,000*l.*, in shares of 10*l.*. To acquire land in Manitoba and carry on the business of a land company. The subscribers are—The Duke of Manchester, Kimbolton Castle, 50; R. Tennant, 45, Portland-place, 50; G. Gilman, Crown-court, 50; J. R. Tennant, Neath, 1; H. W. Maynard, 34, Gracechurch-street, 50; L. T. Whalley, 4, Vere-street, 1; W. Negus, Olney, 1.

THE NORTON TEA COMPANY (Limited).—Capital, 50,000*l.*, in shares of 10*l.*. To acquire and cultivate tea gardens in Assam, India. The subscribers (who take one share each) are—G. Barnett, Dundee; W. Mann, Dundee; H. S. Cox, Dundee; J. S. Low, Dundee; L. Longmuir, Edinburgh; D. Duncan, Liverpool; H. T. Fox, Liverpool.

THE KINDER MERCANTILE PRINTING MACHINE COMPANY (Limited).—Capital, 50,000*l.*, in shares of 1*l.*. To carry on the business of printers in conjunction with an acquired patent. The subscribers (who take one share each) are—F. Mason, Union Chambers; G. Beken, 86, London-wall; J. Hamilton, Walthamstow; H. Jordan, 37, Wallbrook; E. J. Fellows, 384, Great Winchester-street; M. H. Spear, Kentish Town; A. White, 17, Blomfield-street.

THE RETTIE PATENT SEAT AND SCAFFOLD FASTENER COMPANY (Limited).—Capital, 10,000*l.*, in shares of 25*l.*. To acquire and work, sell, lease, or dispose of, certain patents. The subscribers are—J. Dunbar, Brixton; J. W. Garnham, 34, Newington-green, 4; H. M. Goodman, Catford Hill, 10; E. C. Garnham, Peckham, 2; H. S. Garnham, Peckham, 2; C. H. Lake, Wanstead, 12; F. Lake, 10, Laurence Pountney-lane, 1.

THE NORTHERN DISTRICT TELEPHONE COMPANY (Limited).—Capital 100,000*l.*, in shares of 10*l.* and 5*l.*. To establish and conduct any system of telephonic communication. The subscribers (who take one share each) are—C. H. Reed, Sunderland; W. H. Dixon, Sunderland; J. H. W. Cullford, Sunderland; W. E. Irish, Sunderland; T. Wilson, Sunderland; J. Potts, Sunderland; S. Alcock, Sunderland.

THE KETTERING GAS COMPANY now becomes incorporated under the Limited Liability Companies Acts.

LLOYD'S STAFFORDSHIRE PROVING HOUSE COMPANY (Limited).—Capital 30,000*l.*, in shares of 80*l.*. To purchase or otherwise undertake the business, property, and liabilities of the Staffordshire Public Chain and Anchor Testing Company (Limited). The subscribers (who take five shares) are—B. Hingley, Netheriton; H. Pershouse, Tipton; T. Jones, Rowley Regis; A. Hickman, Wolverhampton; J. Green, Old Hill; W. P. Strawson, Cradley Heath; G. B. Hingley, Netheriton; C. Holcroft, Tipton; T. F. Higgs, Dudley; H. G. Walker, Dudley.

THE ANGLO-FRENCH LEATHER COMPANY (Limited).—Capital 20,000*l.*, in shares of 5*l.*. To carry on a business of dealers in hides, skins, leather, &c. The subscribers are—W. Goslett, 7, Gresham House, 100; F. Campbell, Dunster Court, 100; R. P. Hare, Aldershot, 300; H. G. Gooliffe, Kilburn, 200; H. Ball, 149, Palmerston Buildings, 1; H. Barker, Upper Norwood, 1; G. Ball, 149, Palmerston Buildings, 1.

THE DISCOUNT CORPORATION OF LONDON (Limited).—Capital, 100,000*l.*, in shares of 1*l.*. To make advances to persons holding Government or official appointments, or who are in possession of landed or other security. The subscribers (who take one share each) are—B. G. Bloomer, Peckham; A. Cope, Limehouse; T. H. C. Martin, 23, Kensington Park-road; A. T. Dale, Leyton; J. Hanson, 41, Tavistock-street; J. Maughlan, 23, Duncan-terrace; F. Long, 23, Clarendon-square.

THE YORKSHIRE STEAM TRAWLING AND FISHING COMPANY (Limited).—Capital, 20,000*l.*, in shares of 10*l.*. To carry on fisheries of every kind in salt and fresh waters. The subscribers are—E. H. Newton, Scarborough, 15; H. L. Fidden, Scarborough, 10; G. Wilkinson, Scarborough, 10; Z. T. Wellburn, Scarborough, 10; E. J. Berry, Scarborough, 5; A. Lupton, Scarborough, 5; H. L. Woodger, Scarborough, 5.

THE CAMPOS (BRAZIL) IMPROVEMENTS COMPANY (Limited).—Capital 200,000*l.*, in shares of 10*l.*. To construct, establish, and maintain drainage and water-works. The subscribers are—G. Gotto, Hampstead, 10; J. Dixon, 1, Laurence Pountney Hill, 10; F. Beezley, Dulwich, 10; A. Thorne, 1, Laurence Pountney Hill, 10; P. J. Thomas, 7, South-crescent, 5; J. S. Rivotta, 33, Cornhill, 1; C. Neale, 4, Victoria-street, 10.

PROVINCIAL STOCK AND SHARE AUCTION COMPANY (Limited).—Capital 50,000*l.*, in shares of 1*l.*. To sell, purchase, exchange and otherwise deal in stocks, shares, debentures, &c. The subscribers (who take one share each) are—A. Barrow, Manchester; J. Rickett, 62, New North-road; D. W. Finkenstadt, 134, Grove-road; C. A. Venn, 57, Coleman-street; H. Bickerton, 64, Delany-street; G. W. Cooke, 23, Brixton-road; T. Ford, Tottenham.

THE BARCELONA (RUBI) WATERWORKS COMPANY (Limited).—Capital 40,000*l.*, in shares of 20*l.*. To supply water to that town and neighbourhood, and to acquire any concession for that purpose. The subscribers (who take one share each) are—Sir W. Brett, Escher; Sir W. Maguay, 1, Verulam Buildings; F. J. Heseltine, 1, East India-avenue; A. G. Spilsbury, Madrid; G. H. McCausland, 35, Norfolk-street; Vicomte Mde Gornbert, Paris; E. W. Layton, 1, East India-avenue.

THE ROMAN GRAVELS BOUNDARY MINING COMPANY (Limited).—Capital 50,000*l.*, in shares of 1*l.*. To adopt and carry into effect an agreement made between J. E. Stokes, of the one part, and J. Beazley, of the other part, for the company, in regard to the acquisition of a mining property situated in Salop, for the sum of 20,000*l.*, payable 14,000*l.* in fully paid-up shares, and the balance in cash. To search for, win, and raise all lead, copper, silver-lead, tin, blende, calamine, coal, cannel coal, ironstone, and other ores, fossils, metallic, and other minerals, and generally to carry on all operations connected with a mining company. The subscribers (who take one share each) are—H. Smith, 7, Furnival's Inn, solicitor; J. Stanley, 41, Gloucester-terrace, no occupation; H. S. Mappin, West Dulwich, Esq.; W. Bowsted, Pontesbury, auctioneer; J. Beazley, 3, Great Winchester-street, commission agent; C. Massey, Lawless, Heathwood, agent; F. H. Barker, Camberwell, accountant. The subscribers are to determine the directors, whose remuneration will be 300*l.* per annum (divisible).

THE LIVERPOOL HOUSE PROPERTY INVESTMENT TRUST (Limited).—Capital, 10,000*l.*, in shares of 10*l.*. To carry on generally a house property and land company's business in all branches. The subscribers (who take one share each) are—J. E. Bennett, Liverpool; T. Cook, Liverpool; B. Cooke, Liverpool; H. S. Williams, Liverpool; C. M. C. Dawbarn, Liverpool; W. H. Williams, Liverpool; H. W. Madge, Liverpool.

WINBOR AND NEWTON (Limited).—Capital, 130,000*l.*, in shares of 200*l.*. To purchase and continue a manufacturing business of artists' colours, situated in Kentish Town and Rathbone-place, W. The subscribers (who take one share each) are—H. C. Newton, 37, Rathbone-place; A. H. Newton, Hampstead; A. A. West, Hornsey; R. W. Crupp, Kensington; F. M. Cartwright, 87, Seymour-street; W. J. Winsor, 100, Westbourne-grove; J. Taylor, 90, Huddleston-row.

STEAMSHIP "BALCARRES" COMPANY (Limited).—Capital, 19,200*l.*, in shares of 300*l.*. To carry on a shipowners' business, limited to one vessel. The subscribers (who take one share each) are—J. Houl, Liverpool; J. Burden, Liverpool; G. R. Glover, Liverpool; E. Finlay, Liverpool; G. R. Bell, Liverpool; T. Leech, West Kirby; J. Jones, Barnes.

STEAMSHIP "BENTINCK" COMPANY (Limited).—Capital, 14,500*l.*, in shares of 226*l.*. The same objects as the foregoing. The subscribers (who take one share each) are—J. Houl, Liverpool; E. Finlay, Liverpool; H. Rawcliff, Liverpool; T. Leech, West Kirby; C. W. Pollexfen, Liverpool; J. Laird, Birkenhead; J. Jones, Barnes.

THE LINCOLN COFFEE PALACE (Limited).—Capital 15,000*l.*, in shares of 1*l.*. To carry on a refreshment keeper's business, excluding the sale of all intoxicants. The subscribers (who take one share each) are—J. Maltby, Lincoln; W. Rainsforth, jun., Liverpool; E. Waterhorm, Liverpool; B. Carman, Liverpool; H. Wyatt, Liverpool; T. Dutton, Liverpool; T. Bell, Liverpool; A. W. Hall, Liverpool; M. A. West, Liverpool.

THOMAS DANKS AND COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.*. To acquire and continue an ironmonger's business. The subscribers are—C. G. Hill, Arnot Hill, 50; W. Ford, Nottingham, 50; S. Danks, Nottingham, 200; J. N. Grenall, Nottingham, 200; W. F. Storer, Radcliffe-on-Trent, 10; W. Danks, Nottingham, 10; J. W. McCraith, Nottingham, 10.

THE WYE COLLIERY COMPANY (Limited).—Capital 40,000*l.*, in shares of 10*l.*. The adoption of an agreement made between R. Thomas, W. S. Ogden, J. Lysaght, R. Haines, J. Fellows, and C. J. Ryland, on the one part, and A. Petter, of the other, for the sale and purchase of certain shares of the speculation and Rose-in-Hand, and the entirety of the New Mills engine gates and collieries, respectively, situate in the Forest of Dean district, Gloucestershire, together with the buildings, lands, and rights connected therewith, for the purpose of carrying on the businesses of coal and ironmasters, iron-workers, and wire manufacturers, galvanisers, and trimmers of iron, engineers, miners, colliery proprietors, coke manufacturers, &c. The subscribers (who take one share each) are—R. Thomas, Lydbrook, tin-plate manufacturer; S. Lysaght, Bristol, civil engineer; W. S. Ogden, Newport, merchant; J. Lysaght, Bristol, ironmaster; C. J. Ryland, Bristol, accountant; R. Harris, Lydbrook, colliery manager; J. Fellows, Churchfield, carrier. Messrs. Thomas Ogden, J. Lysaght, Harris, and Fellows are to be the first directors, whose number must not exceed six, or be less than three. Share qualification 500*l.*

THE SOUTH BANK IRON COMPANY (Limited).—Capital 25,000*l.*, in shares of 25*l.*. To carry on the business of engineers, machinists, iron and brass founders, &c. The subscribers are—G. B. Willis, Middlesbrough, 20; G. G. Hornsby, Middlesbrough, 20; J. H. Linthorpe, Middlesbrough, 40; G. Coulthard, 12, Abchurch-lane, 20; A. B. Boucher, Broadway Chambers, 16; J. A. Yglesias, 8, Jeffreys-square, 8; H. J. M. Debnay, 8, Jeffreys-square, 8; W. Jones, 16, King William-street, 8.

LA PRATA MINING COMPANY (Limited).—Capital 80,000*l.*, in shares of 1*l.*. To purchase or otherwise acquire and work lands, estates, mines, minerals, and mining rights in Portugal, and to adopt for that purpose an agreement made between C. F. Blanck, of Lisbon, and J. Oldfield acting as trustee for the company, and to carry on the business of a mining and smelting company in all branches. The subscribers (who take 200 shares each) are—T. Carr, Rock Ferry, gentleman; W. R. Alexander, Lamborne, general; J. Oldfield, 117, Great Russell-street, gentleman; J. Hastings, Seymour Place, gentleman; H. Lyon, Dashwood House, gentleman; S. G. Grady, jun., 8, St. George's-square, gentleman; E. Chamberlain, Rayswater, gentleman. The following are the first directors—General Alexander, Messrs. Carr, J. D. Lilley, J. H. Claus and Signor J. Lacher. The number must not be less than three or more than seven.

THE "SUFFOLK" STEAMSHIP COMPANY (Limited).—Capital 46,000*l.*, in shares of 50*l.*. To carry on a shipowner's business in all branches. The subscribers are—J. P. Hooper, 31, Lombard-street, 100; W. E. Hooper, Streatham, 20; F. Murrell, Tottenham, 15; A. S. Williams, 31, Lombard-street, 10; S. Atwood, Kentish Town, 10; J. Pratt, Liverpool, 1; F. Wiggins, 157, Fenchurch-street, 1.

THE DANUBIAN MINING CORPORATION (Limited).—Capital 120,000*l.*, in shares of 1*l.*. To purchase and otherwise acquire and work mines, minerals and mining rights, lands, hereditaments, and all such necessary plant, machinery, &c., in Austro-Hungary and elsewhere, and in particular a property situate near Orsova, with the mills, ore-houses, and other buildings erected thereon. The subscribers (who take one share each) are—E. Schubert, 32, St. Swithin's-lane, accountant; T. W. Jones, Temple, Esquire; C. A. M. Jenkins, Salisbury-street, solicitor; Hon. J. M. F. Erskin, 20, Robert-street, banker; R. Austin, 8, Coburg Place, mining agent; J. Murphy, Highgate, manufacturer; C. J. Lucas, 42, Red Lion-street, accountant.

THE NORTHGATE BOOT AND SHOE MANUFACTURING COMPANY (Limited).—Capital, 10,000*l.*, in shares of 10*l.*. Manufacturers, merchants and dealers in boots, shoes, leather, &c. The subscribers are—J. G. Barnes, Lyston, 40; F. Bardett, Round Hill, 20; J. T. Roberts, Leicester, 10; J. Pepperdine, Leicester, 10; T. Evans, Burton-on-Trent, 20; S. B. Goodwin, Leicester, 2; W. Barsby, Leicester, 2.

KANSAS STEAMSHIP COMPANY (Limited).—Capital, 92,000*l.*, in shares of 100*l.*. A shipowner's business in all branches. The subscribers (who take one share each) are—F. W. Glover, Liverpool; F. Massey, Liverpool; G. H. Warren, Liverpool; F. Warren, Liverpool; E. P. Bates, Liverpool; W. H. Jones, Liverpool; G. T. Bates, Liverpool.

THE MORTGAGE COMPANY OF ENGLAND (Limited).—Capital, 5,012,500*l.*, in shares of 20*l.* and 1*l.*. To borrow or receive on deposit moneys not exceeding in the aggregate at any one time outstanding ten times the amount of the subscribed capital of the company, for the time being. The subscribers (who take 50 shares each) are—Lord Sherbrooke, Lowndes-square; Sir W. H. Dyke, Dartford; Sir P. Rose, 1, Cromwell-road; R. L. Lopes, Lantridge Park; C. Schiff, 43, Lothbury; J. Westlake, Chelsea; J. Morris, 6, Old Jewry.

REGENERATING ELECTRIC BATTERIES.

An improved method of regenerating the energy of electric batteries, the elements whereof are rendered fit for renewed action by passing through the same an electric current whose direction is opposite to that of the current produced when the said batteries are in operation has been invented by Mr. LOUIS MINCHE, of Paris, the invention being especially applicable to batteries in which natural or agglomerated peroxide of manganese is used, with or without a porous vessel, immersed with the zinc in a solution of hydrochlorate of ammonia or some other exciting liquid; but it is obvious that the said invention is applicable to all batteries capable of being regenerated by the method above indicated.

Describing the operations as applied to a battery of (say) 20 elements, consisting of zinc plates and plates of agglomerated peroxide of manganese, the invention is thus carried into practice. When this battery is caused to operate the zinc is oxidised and dissolved in the hydrochlorate of ammonia, and the peroxide of manganese is deoxidised, or passes into a state of diminished oxidation. After a few hours' working the battery has lost a part of its energy, and to restore this lost energy to the same he causes the current from another battery or from any generator of electricity to pass through the battery to be regenerated in a direction opposite to that of the current generated by the latter, this having the effect of reducing the dissolved zinc to the metallic state, and of re-oxidising the peroxide of manganese to the degree of oxidation possessed thereby at first. For reconstituting or regenerating the elements of the main battery he uses preferably a thermo-electric battery, but he may use a magneto-electric machine or any other source of electricity. If the principal battery is arranged for tension currents the battery which is to reconstitute its elements will be arranged in like manner, but he may use a commutator, by means of which the elements of the principal battery may be connected for "quantity" during the time in which the regenerating battery acts. This arrangement allows of a great number of elements being reconstituted by means of a relatively feeble battery, as is practised in regard to the batteries termed secondary-current batteries. When the principal battery has attained its maximum power it will only be requisite to turn the commutator to re-establish the original order.

This method of regeneration or restoration of energy can be applied to batteries whose positive plate is not surrounded by a depolarising liquid, and whose depolarisation is spontaneous; for instance, platinated plates of carbon or analogous plates. It may also serve

to regenerate batteries, the depolarising body whereof is an oxidising body, such as bichromate of potash, permanganate of potash, perchloride of iron, bichloride of tin, and analogous materials.

NEW APPLICATION OF ASBESTOS.

So many enquiries have recently been made as to the value and uses of asbestos that it will give general satisfaction to learn that Mr. EGMOND J. ERICHSEN, of Copenhagen, has now perfected an invention, according to which pulverised asbestos in a raw state or otherwise is so combined with various silicious solutions and with metallic or other colours or pigments, and according to requirements with plaster of Paris, chalk, lime, clay, sand, or other loading materials or compositions, as to produce new material or materials or compositions which partake of the nature of stone or enamel, being hard, dense, resisting oxidation, and heat, cold, and damp.

The invention is of course capable of modification within certain limits, but it may be stated that as an example of a paint or enamel which the inventor calls "the imperial," 50 parts of silicious solution of 25 to 50° Baumé may be combined with 20 to 30 parts of pulverised asbestos, 10 to 20 parts of metallic oxides, and 30 to 60 parts of chalk or other such material. As another example of "imperial" paint may be named 50 parts of silicates (from potash or alkalies) in solution of 25 to 50° Baumé, 20 of asbestos powder, and 30 of zinc, iron, lead or other metal colours, alkaline earths, magnesia, barytes, or their acid combinations, chalk, lime, and earth colours. Applied as a paint it forms a fireproof enamel, resisting the influence of oxidation of iron coated therewith and the influence of white heat; for porous fireproof materials it serves to give a glassy surface, stopping the pores. It is applicable as a coating for building materials, such as stone, newly faced or decaying or decayed, ornamented or plain, and cement castings and concrete, also for wood, for gas and water pipes inside and outside, for roofing felts and asphalt roofing materials, for roofing of iron and other metals for the inside and outside of wooden and iron ships, and for brickwork to resist damp and atmospheric influences.

It is further suggested that the material is specially applicable to the protecting of the inside and outside parts of steam-boilers exposed to the injurious effects of fire and air. The iron surface to be coated with the paint must be first well cleaned. To do this, take in proportion one gallon of pure water and 1-10th gallon of sulphuric acid 65° Baumé, and mix them well together, and with a mop rub the metal surface well forwards and backwards to remove the rust or greasy matters, or place the parts to be coated in a vessel or reservoir for some hours (say 12) in the above named solution. When the solution has properly entered the pores, wash the metal surfaces over with clean cold water and leave them to dry; then coat with the paint, and rub it with a hard painter's brush into the pores of the metals, so that there is no point left untouched. The paint dries up in 5 to 20 minutes, and is hard, and day after day increases in strength. It combines with or adheres firmly to the iron and other metal surfaces, and it will prevent corrosion. As a coating or paint for brickwork and woodwork, it consists of silicate of potash, zinc oxide, chalk, and powdered asbestos, and resembles the old fresco from Pompeii, and to this is added any kind of dry colours. It is worked out with an iron trowel or wood plate covered with felt, and made into a thinner or thicker coat as desired, and with a quite smooth surface, and never requires to be painted with lime colours, or oil colours, or composition colours, and can be cleaned with brushes with soap and hot water. For coating brickwork and woodwork the proportions most suitable appear to be—powdered asbestos fibre 20 parts, with 20 to 30 parts of silicious solution of 25° to 30° Baumé; 10 to 15 parts of oxide of zinc; and 50 parts of chalk and pure earth colours. It dries quickly, becomes hard as stone, and is like the old Pompeii stucco.

Brick walls and wood articles to be coated with the new material must first be cleaned with water and soap, and then be rubbed in with a thin solution of silicate of potash 10° Baumé, so that it enters the pores. This impregnation should be done twice, with an hour between, but not in frosty weather, before the walls, bricks, and wood articles are painted with the paint, which may be called "fresco." White walls and ceilings may be covered with paper, which is then coated with the paint. For this may be used sulphate of baryta or zinc white mixed with pulverised asbestos and various silicate solutions of suitable strength. The walls and ceilings so covered and coated can be washed with water whenever required to be cleaned. Compositions which may be taken as examples are 20 per cent. of powdered asbestos fibre, 30 to 50 of sulphate of baryta, and remainder silicate of potash of 25° Baumé; also 20 parts asbestos, 20 to 30 zinc white, 10 chalk, and 40 to 50 silicate of potash of 25°. In either case pure earth colours are to be added as required. As a moulding composition or artificial stone it may be used for numerous articles by suitably proportioning the amount of stoney or clayey materials therein, such as clay, sand, burnt clay. The articles may be formed or moulded solid or hollow, and by hand, or steam or hydraulic pressure; they are afterwards heated, and will then have a great hardness. Half of the imperial and half of the clay or sand is a suitable proportion for many purposes, but in some cases this composition is used only as a thick outer layer, while the inside of the block or parts consists of clay or other cheap materials.

For coating boilers externally for preventing radiation of heat a composition is made of parts of asbestos fibre and parts of silicate solution of 25° Baumé. It is made as a thick dough, and if put directly on the boiler in a layer about $\frac{1}{2}$ in. thick it will harden quickly. It is preferable, however, to make a framework to suit the shape of the boiler surfaces of hoop iron (say) about $\frac{1}{4}$ or 1 in. wide, and with 2 to 4 in. square open spaces between, and having pegs standing out about $\frac{1}{4}$ or 1 in. On the outside of this framework is laid a layer, about $\frac{1}{2}$ inch thick, of the dough, and on this again a layer about $\frac{1}{4}$ or 1 in. thick of a mixture of "imperial," with about an equal proportion by weight of pulverised ground fire-bricks. The framework having the aforesaid coating may be removed from the boiler whole whenever desired for examining or repairing, without (as is generally the case with boiler compositions for preventing radiation of heat) breaking the coating to pieces. The coating may be painted over, even externally, with a thin coat of the imperial paint. It will be observed that the great recommendation of the invention is that non-fibrous asbestos, which has hitherto been comparatively unmarketable, will acquire a permanent commercial value.

COATING METALS WITH TIN.—The desirability of coating lead pipes with tin when they are to be used for the conveyance of water has several times been noticed in the *Mining Journal*, and it is believed that this will be greatly facilitated by the adoption of the invention of Mr. A. Gutensohn, of Southampton Buildings, who proposes first to make a solution of chloride of tin, either saturated or of as great strength as conveniently possible, and free from acid. He then makes a hot solution of pyrophosphate of soda of such strength that crystals of the salt separate if the solution be allowed to cool, and adds the last described solution of chloride of tin, phosphate of tin being precipitated. He collects the sediment of phosphate of tin thus precipitated, and dissolves it in an alkaline solution, preferably caustic soda, to which about 1 per cent. of liquid ammonia has been added. The solution thus obtained is placed in a bath or other suitable vessel, and the lead or other metal to be coated with tin is plunged into it or passed through it, the deposit of the tin being effected by a current of electricity generated in any of the ordinary well-known methods, the positive pole from such generating apparatus being connected with fragments or sheets of metallic tin suspended in the bath or vessel already described, whilst the negative pole is connected with the lead or other metal which is to be coated. The strength of the solution in the bath or vessel may be varied inversely according to the strength of the electric current, the solution being more diluted as the current of electricity is stronger. In order that the cost of tin produced by the novel process described may be as pure as possible, the chloride of tin used as first described should be entirely free from iron. After the bath has been prepared as described, I sometimes add to it a small proportion of a solution of pure chloride of tin, by which

the solution is made to contain a somewhat larger proportion of tin. As the deposit of tin by means of electricity in the way described can be made considerably thinner than tin applied to the surface of metal in the usual way by rolling, considerable economy is effected in the cost of the tin, as well as in the cost of repeatedly rolling in the ordinary way.

Original Correspondence.

THE MYSORE REEFS GOLD MINING COMPANY.

SIR,—Referring to the paragraph which appeared in last week's Journal relative to this company, I am to inform you that Messrs. Southgate and Wilson have resigned their seats at this board. Mr. Anderson has been appointed a director in the place of Mr. Southgate. He is an original subscriber for and now holds 17,000 of the company's shares. The directors hope to announce in a few days that another shareholder holding a very large stake in the company has joined the directors in the place of Mr. Henry Wilson. Messrs. Southgate and Wilson each hold 100 shares in the company. In consequence of these changes the board have been able to reorganise their London management, and effect a present saving to the company at the rate of not less than 1250*l.* per annum.

London, Dec. 23.

P. A. EAGLE, Secretary.

GREAT SOUTHERN MYSORE GOLD MINING COMPANY.

SIR,—In reference to the paragraph in last week's Journal, in which it is stated that Mr. Charles F. Bray had resigned his position as manager of this company's property in India, I am instructed by the board to inform you that this is not the fact, as Mr. Charles F. Bray was summarily dismissed.

London, Dec. 21.

ERNEST H. GOULD, Secretary.

FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, Dec. 22: Produce 12 days, 1st division of December, 10,000 o*z.*, value, 3375*l.*; yield, 4*o* 6*o* 10*o* per ton; profit for the month of November, 3900*l.*

LA PLATA.—For the week ending Dec. 4 the value of consignments is equal to 5676*l.*

ALMADA AND TIRITO CONSOLIDATED SILVER.—Telegram from Mr. Clemes, Dec. 2: We have remitted you \$5000.—Dec. 5: Cut the lode in ore at the cross-cut Mina Grande; 40 o*z.* per ton of 2000 lbs.

QUARTZ HILL CONSOLIDATED GOLD.—Telegram received from the company's confidential agent: Central City, Colorado, Dec. 20, 75 o*z.* gold (Troy) and \$140 this week.

POTOSI GOLD.—Telegram received Dec. 19: Recommended crushing on the 7th inst.

PITANGUI GOLD.—T. S. Treloar, Pitangui, Nov. 18: The only produce obtained for the month of October was from scrapings in the wash-house, 25*o* 4 o*z.* of gold, valued at 8*o* 6*o* per oitava, equals the sum of 11*l.* 4*o* 5*o* 5*o*. The estimated costs for the same month, at Exchange 22½*d.* (there being no capital expenditure during the month) amounted to 815*l.* 16*o* 5*o*; leaving an estimated loss for the month of 804*l.* 12*o*.

NEW QUEBRADA.—Month of October: Dispatched to the coast for shipment—Regulus from smelting-works, 385 tons, 21*o* 35 per cent. dry; ore from the mines, 2515 tons, 19*o* 63 per cent. dry; total, 2601 tons. Forwarded from mines to smelting-works, 1102 tons, 5*o* 94 per cent. dry. Home arrivals, 3162 tons; sales of ore, 1532 tons (average price per unit, 12*o* 3*o* 3*o*); quantity floated on Oct. 31, 4321 tons; stock at the mines on Oct. 31, 2090 tons; stock of ore and regulus on wharf at Tucacas on Oct. 31, 3230 tons.

GOLD HILL.—Capt. W. Treloar reports that they have commenced collaring up Miller's shaft; this is about 225 ft. eastward of Bernhard's shaft, and here three sets of oak timber have been put in, lathed, and secured for the purpose. From this shaft we intend to drive on the lode at the horizon of 50 ft., to open a communication with the sink, in course of sinking between the said two shafts, which is now down 33 ft., and which promises to open out a good piece of stopping ground.

—Mr. W. H. Bullock reports: We are clearing up an old shaft, which is 166 ft. south-west of engine-shaft, and have a communication to our 163 ft. level; this will lay open a splendid piece of ground for stopping. Reservoir veins are still producing good quality ore, and the two veins are coming together as we are going down. Miller's vein has improved since I last reported to you.—Miller's Whim-Shaft: We are putting in new timber around the collar, and shall soon get this shaft ready for the whim to haul the ore. All other work progressing, and I have every faith that Gold Hill will be a success.

EBERHARDT.—F. Drake, Dec. 3: I beg to hand you my statement of progress for the five weeks ending this date, and will here state that the 2000 ft. workings have been looking better the past week than at any time previous. At both points of the driving we have quartz and some ore. I will endeavour to give you a fuller account of this work in my monthly summary, which I propose to forward shortly. The 6000 ft. drift east (new drift): Run for week ending Nov. 19 15 ft.; run for week ending Nov. 26 34 ft.; run for week ending Dec. 3 38 ft.; total distance, 87 ft. The 6000 ft. drift west: Run for week ending Nov. 5 14 ft.; total distance, 507 ft. The 2000 ft. drift upper level easterly: Run for week ending Nov. 5 9 ft.; run for week ending Nov. 12 20 ft.; run for week ending Nov. 26 4 ft.; total distance, 93 ft. The 2000 ft. drift upper level southerly: Run for week ending Nov. 19 7 ft.; run for week ending Nov. 26 15 ft.; run for week ending Dec. 3 12 ft.; total distance, 34 ft. The 2000 ft. drift upper level westerly: Run for week ending Nov. 5 6 ft.; run for week ending Nov. 12 14 ft.; run for week ending Nov. 19 5 ft.; total distance, 68 ft. The 2000 ft. drift upper level cross-cut: Run for week ending Nov. 26 5 ft.; run for week ending Dec. 3 5 ft.; total distance, 10 ft.

XUBA.—A telegram has been received announcing that washing has commenced.

VIRNEBERG.—R. R. Roskilly, Dec. 20: Hadley Engine-shaft: We are not as yet through the lode in the winze below the 140 metre level south, and it is with much pleasure I am able to state that the lode continues to look well. The forebush is still in copper ore, and for the distance opened it will yield fully 6 tons of that mineral per fathom—a splendid course of ore. All effort is being brought to bear upon this point in order to reach the hanging-wall, also with a view to resume the sinking of the winze, by which a large section of ore ground will be made available. We have no other change throughout the mine calling for remark.

LAST CHANCE.—Dec. 22: Telegram from the agent at Salt Lake—We have during last week sunk 23 ft. in Shaft No. 1. Opulent Mine.

ISABELLE (GOLD AND SILVER).—Mr. Lewis Chalmers, Nov. 23: The weather is moderating; but I could not get teams to contract for hauling at this season under \$4 per ton. In summer and fall ore can be hauled for \$3, and if I succeed in making the showing, which I am confident I shall do, I shall ask for permission to build, and increase our output to 40 tons per day, which, with power mills and hoisting works, the mine can easily supply.

Telegram received in London on Thursday from the manager: Mine looking splendid. Mill running nicely.

KAPANGA.—J. Thomas, Nov. 5: For the past month ending the 12th ult. the 70 cross-cut has been further driven east 29 ft., at the late contract price of 3*l.* per foot; the length now driven is 98 ft. from the shaft. The end continues in the same class of hard elvan country as reported last month, which we anticipated to meet at this point, and I do not think a softer change of stone will be seen until the lode is reached. Notwithstanding the difficult nature of this belt of elvan for working I am pleased to say the men continue to make excellent progress in driving ahead, and hope by the end of December to report we are on the lode; this end being in good country there is nothing in particular to remark thereon. The 50 cross-cut has again been further driven 20 ft., entirely through Scotty's lode, the total length of the cross-cut being 166 ft. east from the old lode. Scotty's lode was cut at a distance of 146 ft. from the old lode; in cutting through it for the last 20 ft. it was found lying nearly horizontal for that distance, when it changed to the usual underlie of 45° westerly. During the time it continued so flat it proved disordered, and split into branches for quartz, intermixed with killas and country, and no gold to value seen after driving 5 or 6 ft. ahead from where the first magnificent specimens were obtained in cutting into the lode. As it now assumes a definite character I have commenced to drive north of the cross-cut, and have driven 15 ft., where it is seen regular and compact, averaging 18 in. wide, consisting of a very kindly description of quartz and flookan, which contains quantities of fine black mundle, the usual indications for meeting strong goldstone at any moment. The preliminary work of cutting and securing a plat at the junction, with laying down rails for the proper convenience of making good progress, has been completed during the month, which had to be done before the lode could be opened on north and south of the cross-cut. Everything is going on speedily and steadily underground and at surface, and the prospects are very encouraging. The machinery in all departments continues in good order, causing no delays to check our present good progress.

DON PEDRO.—Mine captain's letter, dated Nov. 24: Drainage: Water at present 9 ft. below eastern of jack-head. Two joints failed in jack-head, and were at once made new; idle one hour for same, and three hours to change bucket and door valve of same lift. Three linings changed, one roll, &c. Machinery in mine in good order.—New Machinery, &c.: A large amount of stone raised, debris removed, pipes and launders of present machinery altered to facilitate progress. Timber and iron required for the job ordered and expected daily.—Adit Level: Four sets renewed and three sets of laths changed.—Bryan's Level: Repairs well advanced.—Explorations: The branches continue much the same, though hunchy. A temporary roof erected for shelter in washing samples, &c. Ore derived so far is fully up to standard.—Reduction: Launders in hand. Old ones decayed and fallen down.

PLACERVILLE.—The mine is looking well. Mr. W. A. Jones, for several years underground foreman of the Eureka Consolidated, at Eureka, has been appointed superintendent.

RICHMOND CONSOLIDATED.—The following cablegram was received this morning (Dec. 20) from the mine at Eureka, Nevada:—Week's run \$35,000, from 911 tons of ore; refinery, \$34,000.

N. Wescott, Nov. 30: The following is the account of the work done in the above mine for the past week. The north-east drift on the 200 level has been run 10 ft. in limestone. The west drift in this level from shaft has been run 14 ft. in the same material; ground hard. The rise from south drift near shaft has been extended 4 ft. (starting from the 200 level). The 300 north drift has been run 300 ft. in limestone along fissure; favourable ground for ore. The 400 north drift, from 11 chamber has been run 14 ft. in limestone. The 500 west drift, from bottom of 15 chamber has been run 15 ft. in ledge matter, some ore. The 500 south 20° west drift, from bottom of 15 chamber, has been run 34 ft. in ledge matter, some ore. The 600 east drift from cave has been run 19 ft. along

fissure in ledge matter, some ore. The east drift from bottom of 50 ft. winze (new find) has been run 3 ft. in limestone. A drift has been run south from the above drift 4 ft. in ledge matter, and there has also been a drift run north 6 ft., mostly limestone, from above drift. The 600 rise, near 14 chute, has been extended 7 ft. in ledge matter, some ore. The 600 rise, 62 ft. east from fissure drift (600 level), has been extended 8 ft. in ledge matter. The 700 drift from winze, under 13 chute, has been run 6 ft. north in limestone; some cross-cutting was done in this drift in red limestone, but nothing found. The 1200 north drift drift from shaft has been run 54 ft. in quartzite, very soft and fine, no appearance of limestone. The south drift on this level has been run 9 ft., in hard quartzite; this is being used at the furnace for flux.

CANADIAN COPPER.—Francis Bennetts, Dec. 8: Although there are no new features of importance disclosed by the past week's workings in the mines, the extension of the drift, &c., has shown a continuance of veins of similar nature to what had already been passed through, and has in the case of the Hartford Mine in particular added to the reserves of ore laid open. The Capleton Smelting Works are doing good work, and up to date have produced regulus in excess of quantity to that of the same number of days working since we commenced to smelt, and we shall endeavour to give you a satisfactory result for this month's working.

CHEAP AND SIMPLE PUMP.

To form pumps in such a manner that the cylinders and pistons do not require boring and turning, as has heretofore been necessary, a ring of india rubber is, according to the invention of Mr. HAZELLE, of Paris, stretched upon the piston of the pump, thereby forming a rolling piston or packing, the friction of which is very trifling. When motion is imparted to the piston of the pump the packing rolls to and fro, forming a close packing. Flanges are arranged at each end of the piston to prevent the ring coming off. Pumps may thus be made at a very cheap rate, and may be constructed as single, double, or triple action. The same arrangement is equally applicable to pumping and forcing air or gaseous fluids, and may be worked horizontally or vertically, as may be desired. In some cases apparatus is constructed similar to a gasometer and water holder, with inlet and outlet valves, using an india rubber ring on the inverted bell or gasometer as a rolling packet between the bell and the water holder, which prevents the water from being forced out of the water holder, when a rapid up and down motion is imparted to the inverted bell. Flanges are fixed to the bell to prevent the ring from coming off. One or more of these bells can be worked connected together if desired.

In many cases it is preferred to use air vessels when pumping and forcing liquids, and also when pumping air or gas under pressure it is preferred to use an air receiver to regulate the flow, and when necessary safety and regulating valves are also used. Various methods may be used for giving motion to the pumps or apparatus, either by direct acting engines or otherwise, or they may be worked by hand-power. The apparatus will be found of great advantage for ventilation of all kinds, also to produce a blast to be employed in the melting of metals, and for blowing smiths' fires, as well as for a great many other purposes whatever currents of air require to be exhausted or forced. Various modifications may be made in detail in carrying out the invention, according to the purposes for which the same is required to be used. When telescopic tubes or pipes are required to be used in connection with the aforesaid apparatus, it is preferred to use with such tubes or pipes an india-rubber ring or rolling packing to form the joint between the tubes, similar to the rolling piston above described.

MANUFACTURE OF TIN AND TERNE PLATES.

In the manufacture of tin and terne plates, as ordinarily conducted, the plates to be coated with tin or terne metal, after being pickled and annealed and washed, are placed in water to await the coating operation. When the plates are to be coated they are removed from the water and plunged into cold palm oil or grease, from which they are removed and plunged into a bath of molten tin or terne metal. They are then withdrawn and brushed to remove the surplus metal, and are plunged into another bath of molten tin or terne metal, and withdrawn and passed between rollers and cleaned. With a view to simplify this process, and to economise the materials used, Mr. D. Leshon, of Penclawdd, proposes to cover the water in which the plates are immersed with a layer of oil, or in using a solution of carbonate of soda or other suitable alkaline salt instead of water, the said solution being covered with a layer of oil or used alone, and in the use of a bath of hot grease instead of the cold grease, and in the use of one bath of molten metal instead of two such baths, and in dispensing with the brushing of the plates, the second bath of metal and the said brushing being rendered unnecessary by the use of the hot grease.

In carrying out his invention he places the plates after they have been washed into the said solution of soda or other alkaline salt, or into the bath of water if the solution of the alkaline salt be not used, and on removing them therefrom he places them in a rack, and allows them to stand until the greater part of the moisture has drained off. He then places the plates in the bath of hot grease, and removes them and places them in the bath of molten tin or terne metal. When the plates have remained a sufficient length of time in this bath he removes them, and finishes the manufacture by passing them between rollers and cleaning them as usual.

The use of the solution of soda or other alkaline salt in which the plates are immersed, and the layer of oil on the surface of the solution or on the surface of the water, may be dispensed with, and water alone may be used, as usual, if the plates be thoroughly drained after removing them therefrom, and before placing them in the hot grease.

PNEUMATIC SIGNALLING FOR MINES.—There is probably no more reliable system of signalling in mines than the pneumatic, and the improvement invented by Mr. JAMES NEWTON, of Clerkenwell, will render its application still more desirable. The bellows is connected by a jointed link with the end of a rod, which slides through a glass guide, and is attached at its outer end to an air bag or bellows. The latter is connected by a tube with the apartment whence the bell is to be rung, and is inflated by means of the usual press button, or other appliance acting on an air bag at the other end of the tube. This tube is provided with an air valve of peculiar construction to permit the immediate escape of the air pressure from the bellows after it has acted therein. This valve consists of a cupped disc or plug working up and down in a cylindrical case, communicating with the tube above and below the valve. The valve is provided with a central thoroughfare and tubular neck, which when the valve is raised by the air pressure beneath it shuts off an air escape hole at the side of the valve case, but uncovers it so as to permit the free escape of the air bag or bellows, when the valve is caused to fall by the pressure of air behind it produced by the return spring on the balance lever collapsing the air bag or bellows. In the case of a gong the hammer would be carried by the spindle in the place of the bell, and the gong would be a fixture.

HYDRAULIC CAPS FOR WINDING SHAFTS.—The improvements invented by Messrs. Frantz and Westmeyer, of St. Johann, on the Saar, Germany, relate to the cap, stage, or platform lifts of shafts of mines, and consist in the application of two or more double levers worked by hydraulic rams, and serving as supports for the frame carrying the cap, said levers being placed in position by the weight of the cap frame in such a manner as to allow the frame to pass and said levers to return automatically to their former position by hydraulic pressure, the whole being intended as an automatic safety apparatus for holding the cap at any desired level when the skips, wagons, or materials thereon may be readily transferred. The hydraulic arrangement consists preferably of four rams connected by pipes, the piston or head of each ram is provided with a double lever, the fulcrum of which is in the piston, said lever turning on a bolt or nut. One end of the lever is secured by a pin, the other supports the cap frame. The rams are raised by water passing through the pipes from an accumulator.

The Stock Exchange committee have appointed Wednesday a special settling day in the shares of the Quartz Hill Gold Mining Company (Limited).

SMOKE ABATEMENT EXHIBITION, SOUTH KENSINGTON.

Open, 10 to 10 Mondays; 10 to 8 other days. Exhibits in action, ECONOMY, combined with SMOKE PREVENTION. Admission One Shilling; Mondays Sixpence.

CHRISTMAS PRESENTS AT PRESENT PRICES:—ISABELLE. SPANISH THREE PER CENTS. SENTIN. For lowest terms address, "X. X.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

SPECIAL OPPORTUNITY. WANTED, ONE OR MORE GENTLEMEN to join Advertiser in PURCHASING MANAGING PART OF CORNISH TIN MIN. Profits about 300 per cent. This advertisement will not be repeated. Address, "Adit Level," MINING JOURNAL Office, 26, Fleet-street, London.

FOR SALE, 200 Preference Shares UNITED VAN CONSOLS AND GLYN LEAD at 2*o* 4*o*, and 100 Ordinary Shares at 1*o* 4*o*, each net for cash and immediate delivery. Address, Mr. W. HENRY, 83, Alscott Road, Bermondsey, London, S.E.

MINER "E L C A L L A O," GUAYANA, VENEZUELA COUPONS OF SHARES..... 322 Gold in bars produced in the month of October, 1881, and remitted to Messrs. Baring Brothers and Co., London, 7314 37-100 o*z.* DIVIDEND distributed for each coupon, \$200. (Signed) A. J. CAGNINACCI, Vice-President. (Signed) VICTOR J. GRILLET, Treasurer.

LA PLATA MINING AND SMELTING COMPANY.—The Board of Directors have DECLARED the usual MONTHLY DIVIDEND of \$15,000, or SEVEN AND A HALF CENTS PER SHARE, out of the profits for the month of November, PAYABLE on MONDAY, January 2, leaving at credit of Reserve Fund, \$64,504. F. ANDREWS, London Registrar.

PENNINGTON AND CO., SWORN BROKERS, 7, MOORGATE STREET, LONDON, E.C. Transact business in every description of Stocks and Shares. ESTABLISHED 1869.—BANKERS: ALLIANCE. TREVINCO CONSOLS.—These shares should be bought at once. Full particulars on application.

JOSEPH TOMS, STOCK AND SHARE DEALER, No. 28, BISHOPSGATE STREET WITHIN, E.C., has FOR SALE—250 N. Zealand Kapanga, £100 Allam 2 per cent. 10 Akankoo, 7*o* 6*o* 12*o* 3*o*. 20 Pioneer, 17*o* 6*o* 50 Standard Bank London 100 New Trumpet, 20*o* 6*o* 40 Great Holway. don, £3 p*o* 22*o* 6*o* 20*o* 9*o*. Special business can be transacted in the shares against which prices are not affixed. Offers are solicited, and shall receive prompt attention by telegram or letter.

MR. G. E. O. L. E. E., CONSULTING MINING ENGINEER, NORTH ORMESBY, MIDDLESBOROUGH.

MR. F. W. L. GRAHAM, MIDDLESBOROUGH, BROKER FOR THE SALE OF IRON ORES, FERRO-MANGANESE ORES, PLUMBAGO, BAUXITE, REFRACTORY BRICKS, LEAD, ZINC, COPPER, and TITANIFEROUS ORES and ASHES, SALTS, PHOSPHATES, &c.

MR. W. B. COBB, STOCK AND SHARE DEALER, 29, BISHOPSGATE STREET, LONDON, E.C. Corporation of South Australian Copper Mines, and Columbian Hydraulic Shares, should be bought at once. A few copies left of December Circular.

MR. W. TREGELLAS, 40, BISHOPSGATE STREET WITHIN, E.C. Deals in all descriptions of STOCKS and SHARES at close market prices. He strongly recommends the immediate purchase of GOLD HILL Mine Shares and BRAZILIAN GOLD Mine Shares, which are safe to have a great rise. Full information on application personally or by letter.

MR. THOMAS CORNISH, CONSULTING MINING ENGINEER AND FINANCE AGENT. Twenty-five Years Practical Experience in Australian Gold Mining and Management. Advice on Gold Mining Investment. Author of "Gold Mining: its Results and its Requirements." 109, FENCHURCH STREET, LONDON, E.C.

HORACE J. TAYLOR, STOCK AND SHARE DEALER, 38, GREAT ST. HELEN'S, LONDON, E.C. October Circular now ready, and can be had on application. BANKERS: The CENTRAL BANK OF LONDON (Limited).

ESTABLISHED 1863. MR. THORMAN WOODWARD, STOCK AND SHARE BROKER, TRURO. Special Business in Shares of the principal Cornish Mines.

MICHAEL WILLIAMS BAWDEN, MINING AND ASSAYING OFFICES, LISKEARD. Having had 32 years' experience in Mining, is prepared to ADVISE on the MINES in DEVON and CORNWALL, as well as the late schemes and reconstitution of old Mines. A Selected List for Investment. BUYER of 200 Phoenix United shares. Sellers state lowest price.

MESSRS. H. R. LEWIS AND CO., BARTHOLOMEW HOUSE, BARTHOLOMEW LANE, LONDON, E.C. MINING ENGINEERS, EXPERTS, AND DEALERS.

Sound and Experienced Advice in the Selection of Mining Securities—Home and Foreign. Weekly Price-List free on application.

NORTH CARDIGANSHIRE MINES. MR. J. PELL, M.E. (Thirty Years' experience), has SPECIAL dealings in SHARES of several GOOD MINES in this District. SOME GOOD SILVER-LEAD MINING SETTS TO DISPOSE OF.

WANTED, A CAPITALIST, to join in ERECTING MACHINERY to return TIN AND COPPER, A SPLENDID MINE. Numerous lodes centre of richest district in CORNWALL; great reserves of ore above adit levels. Ample water-power. Railway runs through the sett. Royalty, 1-24th. Bankers: National Provincial Bank of England, Aberystwith. Address: TALLYBONT, GLANDOVEY, R.S.O.

MR. THOMAS THOMPSON, JUN., STOCK BROKER, 18, ST. SWITHIN'S LANE, E.C. Mr. THOMPSON transacts business in every species of Stock Exchange and Mining Securities. Mr. THOMPSON affords reliable information to investors, and can give when desired, a list of first-class Stocks and Shares, yielding 4 to 10 per cent. dividends upon present prices. Mr. THOMPSON's weekly Circular may be had on application.

TO SPECULATIVE INVESTORS.—Sums of from £25 upwards are INVITED to be SUBSCRIBED in a SYNDICATE now being formed under splendid auspices. Each £25 invested may be safely expected to fructify to £200. Disappointed shareholders will find this a good opportunity for retrieving their losses. Apply by letter to "Syndicate," May's Advertising Offices, 159, Piccadilly, London.

MR. THOMAS EARLY has removed to 110, CANNON STREET, LONDON, E.C., where all letters must be addressed. Mr. EARLY strongly advises the PURCHASE OF SHARES IN MINES in the ST. AGNES DISTRICT. WHEAL COIT.—This mine conducted on the Cost-book system (Act 1869) adjoins WEST KITTY. The latter is now well-known. The former ore long will be in equal favour. The offices of the company are as above. WEST KITTY shares, which Mr. Early recommended at £2½, are now at 28½ to £9, and will probably go cent. per cent. higher. References exchanged if necessary. Business done at net prices. No fees.

JOHN THOMAS, STOCK AND SHARE BROKER. (On commission only.) Mines inspected and faithfully reported on. Mining Machinery valued. Estimates given for the erection of Mining Plant. Twenty years' Experience. Advice given as to Buying or Selling Mine Shares. ADDRESS—REDRUTH, CORNWALL.

inspector has been appointed, and both chief and assistant appear to have worked energetically and well.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

BUSHEY HYDROTHERAPEUTIC COMPANY (Limited).—Capital 100,000*l.*, in shares of 10*l.*. To acquire land and erect thereon a hydrotherapeutic establishment. The subscribers (who take one share each) are—D. H. Small, 3, Stanley Gardens; J. McDonald, Upper Norwood; H. W. Coyne, Watford; G. Slight, 3, Clifford-street; G. Thomas, South Norwood; H. S. Wild, Bushey Hill; J. Smith, Norwood.

LAND CORPORATION OF CANADA (Limited).—Capital, 500,000*l.*, in shares of 10*l.*. To acquire land in Manitoba and carry on the business of a land company. The subscribers are—The Duke of Manchester, Kimbolton Castle, 50; R. Tennant, 45, Portland-place, 50; G. Gilman, Crown-court, 50; J. R. Tennant, Neath, 1; H. W. Maynard, 34, Gracechurch-street, 50; L. T. Whalley, 4, Vere-street, 1; W. Negus, Olney, 1.

THE NONOI TEA COMPANY (Limited).—Capital, 50,000*l.*, in shares of 10*l.*. To acquire and cultivate tea gardens in Assam, India. The subscribers (who take 100 shares each) are—G. Barnett, Dundee; W. Mann, Dundee; H. S. Cox, Dundee; J. S. Low, Dundee; L. Longmuir, Edinburgh; D. Duncan, Liverpool; H. T. Fox, Liverpool.

THE KINDER MERCANTILE PRINTING MACHINE COMPANY (Limited).—Capital, 50,000*l.*, in shares of 1*l.*. To carry on the business of printers in conjunction with an acquired patent. The subscribers (who take one share each) are—F. Mason, Union Chambers; G. Beke, 86, London-wall; J. Hamilton, Walthamstow; H. Jordan, 37, Walbrook; E. J. Fellows, 384, Great Winchester-street; M. H. Spear, Kentish Town; A. White, 17, Blomfield-street.

THE RETTIE PATENT SEAT AND SCAFFOLD FASTENER COMPANY (Limited).—Capital, 10,000*l.*, in shares of 25*l.*. To acquire and work, sell, lease, or dispose of, certain patents. The subscribers are—J. Dunbar, Brixton; J. W. Garnham, 34, Newington-green, 4; H. M. Goodman, Catford Hill, 10; E. C. Garnham, Peckham, 2; H. S. Garnham, Peckham, 2; C. H. Lake, Wanstead, 12; F. Lake, 10, Laurence Pountney-lane, 1.

THE NORTHERN DISTRICT TELEPHONE COMPANY (Limited).—Capital 100,000*l.*, in shares of 10*l.* and 5*l.*. To establish and conduct any system of telephonic communication. The subscribers (who take one share each) are—C. H. Reed, Sunderland; W. H. Dixon, Sunderland; J. H. W. Culliford, Sunderland; W. E. Irish, Sunderland; T. Wilson, Sunderland; J. Potts, Sunderland; S. Alcock, Sunderland.

THE KETTERING GAS COMPANY now becomes incorporated under the Limited Liability Companies Acts.

LOYD'S STAFFORDSHIRE PROVING HOUSE COMPANY (Limited).—Capital 90,000*l.*, in shares of 30*l.*. To purchase or otherwise undertake the business, property, and liabilities of the Staffordshire Public Chain and Anchor Testing Company (Limited). The subscribers (who take five shares) are—B. Hingley, Netherton; H. Pershouse, Tipton; T. Jones, Rowley Regis; A. Hickman, Wolverhampton; J. Green, Old Hill; W. P. Strawson, Cradley Heath; G. B. Hingley, Netherton; C. Holcroft, Tipton; T. F. Higgs, Dudley; H. G. Walker, Dudley.

THE ANGLO-FRENCH LEATHER COMPANY (Limited).—Capital 20,000*l.*, in shares of 5*l.*. To carry on a business of dealers in hides, skins, leather, &c. The subscribers are—W. Goslett, 7, Gresham House, 100; F. Campbell, Dunster Court, 100; R. P. Hare, Aldershot, 300; H. G. Gooliffe, Kilburn, 200; H. Ball, 149, Palmerston Buildings, 1; H. Barker, Upper Norwood, 1; G. Ball, 149, Palmerston Buildings, 1.

THE DISCOUNT CORPORATION OF LONDON (Limited).—Capital, 100,000*l.*, shares of 1*l.*. To make advances to persons holding Government or official appointments, or who are in possession of landed or other security. The subscribers (who take one share each) are—B. G. Bloomer, Peckham; A. Cope, Limehouse; T. H. C. Martin, 28, Kensington Park-road; A. T. Dale, Leyton; J. Hanson, 41, Tavistock-street; J. Maglashan, 28, Duncan-terrace; F. Long, 28, Clarendon-square.

THE YORKSHIRE STEAM TRAWLING AND FISHING COMPANY (Limited).—Capital, 20,000*l.*, in shares of 10*l.*. To carry on fisheries of every kind in salt and fresh waters. The subscribers are—E. H. Newton, Scarborough, 15; H. L. Fidden, Scarborough, 10; G. Wilkinson, Scarborough, 10; Z. T. Wellburn, Scarborough, 10; E. J. Berry, Scarborough, 5; A. Lupton, Scarborough, 5; H. L. Woodger, Scarborough, 5.

THE CAMPOS (BRAZIL) IMPROVEMENTS COMPANY (Limited).—Capital 200,000*l.*, in shares of 10*l.*. To construct, establish, and maintain drainage and water-works. The subscribers are—G. Gatto, Hampstead, 10; J. Dixon, 1, Laurence Pountney Hill, 10; F. Beezley, Dulwich, 10; A. Thorne, 1, Laurence Pountney Hill, 10; P. J. Thomas, 7, South-crescent, 5; J. S. Rivotta, 33, Cornhill, 1; C. Neale, 4, Victoria-street, 10.

PROVINCIAL STOCK AND SHARE AUCTION COMPANY (Limited).—Capital 50,000*l.*, in shares of 1*l.*. To sell, purchase, exchange and otherwise deal in stocks, shares, debentures, &c. The subscribers (who take one share each) are—A. Barrow, Manchester; J. Rickett, 92, New North-road; D. W. Finkenstadt, 134, Grove-road; C. A. Venn, 73, Coleman-street; H. Bickerton, 64, Delany-street; G. W. Cooke, 23, Brixton-road; T. Ford, Tottenham.

THE BARCELONA (RUBI) WATERWORKS COMPANY (Limited).—Capital 40,000*l.*, in shares of 20*l.*. To supply water to that town and neighbourhood, and to acquire any concession for that purpose. The subscribers (who take one share each) are—Sir W. Brett, Esher; Sir W. Maguay, 1, Verulam Buildings; F. J. Heseltine, 1, East India-avenue; A. G. Spilsbury, Madrid; G. H. McCausland, 35, Norfolk-street; Vicomte Mde Gornbert, Paris; E. W. Layton, 1, East India-avenue.

THE ROMAN GRAVELS BOUNDARY MINING COMPANY (Limited).—Capital 50,000*l.*, in shares of 1*l.*. To adopt and carry into effect an agreement made between J. E. Stokes, of the one part, and J. Beazley, of the other part, for the company, in regard to the acquisition of a mining property situated in Salop, for the sum of 20,000*l.*, payable 14,000*l.* in fully paid-up shares, and the balance in cash. To search for, win, and raise all lead, copper, silver-lead, tin, blende, calamine, coal, canal coal, ironstone, and other ores, fossils, metallic, and other minerals, and generally to carry on all operations connected with a mining company. The subscribers (who take one share each) are—H. Smith, 7, Furnival's Inn, solicitor; J. Stanley, 41, Gloucester-terrace, no occupation; H. S. Mappin, West Dulwich, Esq.; W. Bowstred, Pontesbury, auctioneer; J. Beazley, 3, Great Winchester-street, commission agent; C. Massey, Lawless, Heathwood, agent; F. H. Barker, Camberwell, accountant. The subscribers are to determine the directors, whose remuneration will be 300*l.* per annum (divisible).

THE LIVERPOOL HOUSE PROPERTY INVESTMENT TRUST (Limited).—Capital, 10,000*l.*, in shares of 10*l.*. To carry on generally a house property and land company's business in all branches. The subscribers (who take one share each) are—J. E. Bennett, Liverpool; T. Cook, Liverpool; B. Cooke, Liverpool; H. S. Williams, Liverpool; C. M. C. Dawbarn, Liverpool; W. H. Williams, Liverpool; H. W. Madge, Liverpool.

WINSON AND NEWTON (Limited).—Capital, 130,000*l.*, in shares of 200*l.*. To purchase and continue a manufacturing business of artists' colours, situate in Kentish Town and Rathbone-place, W. The subscribers (who take one share each) are—H. C. Newton, 37, Rathbone-place; A. H. Newton, Hampstead; A. A. West, Hornsey; R. W. Crupp, Kensington; F. M. Cartwright, 87, Seymour-street; W. J. Winsor, 100, Westbourne-grove; J. Taylor, 90, Huddleston-row.

STEAMSHIP "BALCARRES" COMPANY (Limited).—Capital, 19,200*l.*, in shares of 300*l.*. To carry on a shipowners' business, limited to one vessel. The subscribers (who take one share each) are—J. Houlit, Liverpool; J. Burden, Liverpool; G. R. Glover, Liverpool; E. Finlay, Liverpool; G. R. Bell, Liverpool; T. Leech, West Kirby; J. Jones, Barnes.

STEAMSHIP "BENTINCK" COMPANY (Limited).—Capital, 14,500*l.*, in shares of 225*l.*. The same objects as the foregoing. The subscribers (who take one share each) are—J. Houlit, Liverpool; E. Finlay, Liverpool; H. Rawcliff, Liverpool; T. Leech, West Kirby; C. W. Pollexfen, Liverpool; J. Laird, Birkenhead; J. Jones, Barnes.

THE LINCOLN COFFEE PALACE (Limited).—Capital 15,000*l.*, in share shares of 1*l.*. To carry on a refreshment keeper's business, excluding the sale of all intoxicants. The subscribers (who take one share each) are—J. Maltby, Lincoln; W. Rainsforth, jun., Liverpool; E. Waterhorm, Liverpool; B. Carman, Liverpool; H. Wyatt, Liverpool; T. Dutton, Liverpool; T. Bell, Liverpool; A. W. Hall, Liverpool; M. A. West, Liverpool.

THOMAS DANKS AND COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.*. To acquire and continue an ironmonger's business. The subscribers are—C. G. Hill, Arnot Hill, 50; W. Ford, Nottingham, 50; S. Danks, Nottingham, 200; J. N. Grenall, Nottingham, 200; W. F. Storer, Radcliffe-on-Trent, 10; W. Danks, Nottingham, 10; J. W. McCraith, Nottingham, 10.

THE WYE COLLIERY COMPANY (Limited).—Capital 40,000*l.*, in shares of 10*l.*. The adoption of an agreement made between R. Thomas, W. S. Ogden, J. Lysaght, R. Haines, J. Fellows, and C. J. Ryland, on the one part, and A. Petter, of the other, for the sale and purchase of certain shares of the Speculation and Rose-in-Hand, and the entirety of the New Mills engine gates and collieries, respectively, situate in the Forest of Dean district, Gloucestershire, together with the buildings, lands, and rights connected therewith, for the purpose of carrying on the businesses of coal and ironmasters, iron-workers, and wire manufacturers, galvanisers, and trimmers of iron, engineers, miners, colliery proprietors, coke manufacturers, &c. The subscribers (who take one share each) are—R. Thomas, Iydbrook, tin-plate manufacturer; S. Lysaght, Bristol, civil engineer; W. S. Ogden, Newport, merchant; J. Lysaght, Bristol, ironmaster; C. J. Rylands, Bristol, accountant; R. Harris, Iydbrook, colliery manager; J. Fellows, Churchfield, carrier. Messrs. Thomas Ogden, J. Lysaght, Harris, and Fellows are to be the first directors, whose number must not exceed six, or be less than three. Share qualification 500*l.*

THE SOUTH BARK IRON COMPANY (Limited).—Capital 25,000*l.*, in shares of 25*l.*. To carry on the business of engineers, machinists, iron and brass founders, &c. The subscribers are—G. B. Willis, Middlesbrough, 20; G. G. Hornsby, Middlesbrough, 20; J. H. Linthorpe, Middlesbrough, 40; G. Coulthard, 12, Abchurch-lane, 20; A. B. Boucher, Broadway Chambers, 16; J. A. Yglesias, 8, Jeffreys-square, 8; H. J. M. Debney, 8, Jeffrey-square, 8; W. Jones, 16, King William-street, 8.

LA PRATA MINING COMPANY (Limited).—Capital 80,000*l.*, in shares of 1*l.*. To purchase or otherwise acquire and work lands, estates, mines, minerals, and mining rights in Portugal, and to adopt for that purpose an agreement made between C. F. Blanck, of Lisbon, and J. Oldfield acting as trustee for the company, and to carry on the business of a mining and smelting company in all branches. The subscribers (who take 200 shares each) are—T. Carr, Rock Ferry, gentleman; W. R. Alexander, Lamborne, general; J. Oldfield, 117, Great Russell-street, gentleman; J. Hastings, Seymour Place, gentleman; H. Lyon, Dashwood House, gentleman; S. G. Grady, jun., 8, St. George's-square, gentleman; E. Chamberlain, Rayswater, gentleman. The following are the first directors—General Alexander, Messrs. Carr, J. D. Lilley, J. H. Claus and Signor J. Lacher. The number must not be less than three or more than seven.

THE "SUFFOLK" STEAMSHIP COMPANY (Limited).—Capital 46,000*l.*, in shares of 50*l.*. To carry on a shipowner's business in all branches. The subscribers are—J. P. Hooper, 31, Lombard-street, 100; W. E. Hooper, Streatham, 20; F. Murell, Tottenham, 15; A. S. Williams, 31, Lombard-street, 10; S. Attwood, Kentish Town, 10; J. Pratt, Liverpool, 1; F. Wiggins, 157, Fenchurch-street, 1.

THE DANUBIAN MINING CORPORATION (Limited).—Capital 120,000*l.*, in shares of 1*l.*. To purchase and otherwise acquire and work mines, minerals and mining rights, lands, hereditaments, and all such necessary plant, machinery, &c., in Austro-Hungary and elsewhere, and in particular a property situate near Orsova, with the mills, ore-houses, and other buildings erected thereon. The subscribers (who take one share each) are—E. Schubert, 32, St. Swithin's-lane, accountant; T. W. Jones, Temple, esquire; C. A. M. Jenkins, Salisbury-street, solicitor; Hon. J. M. F. Erskin, 20, Robert-street, banker; R. Austin, 8, Coburg Place, mining agent; J. Murphy, Highgate, manufacturer; C. J. Lucas, 42, Red Lion-street, accountant.

THE NORTGATE BOOT AND SHOE MANUFACTURING COMPANY (Limited).—Capital, 10,000*l.*, in shares of 10*l.*. Manufacturers, merchants and dealers in boots, shoes, leather, &c. The subscribers are—J. G. Barnes, Lynton, 40; F. Burdett, Round Hill, 20; J. T. Roberts, Leicester, 10; J. Pepperdine, Leicester, 10; T. Evans, Burton-on-Trent, 20; S. B. Goodwin, Leicester, 20; W. Barsby, Leicester, 2.

KANSAS STEAMSHIP COMPANY (Limited).—Capital, 92,000*l.*, in shares of 100*l.*. A shipowner's business in all branches. The subscribers (who take one share each) are—F. W. Glover, Liverpool; F. Massey, Liverpool; G. H. Warren, Liverpool; F. Warren, Liverpool; E. P. Bates, Liverpool; W. H. Jones, Liverpool; G. T. Bates, Liverpool.

THE MORTGAGE COMPANY OF ENGLAND (Limited).—Capital, 5,012,500*l.*, in shares of 20*l.* and 1*l.*. To borrow or receive on deposit moneys not exceeding in the aggregate at any one time outstanding ten times the amount of the subscribed capital of the company, for the time being. The subscribers (who take 50 shares each) are—Lord Sherbrooke, Lowndes-square; Sir W. H. Dyke, Dartford; Sir P. Rose, 1, Cromwell-road; R. L. Lopes, Landridge Park; C. Schiff, 43, Lothbury; J. Westlake, Chelsea; J. Morris, 6, Old Jewry.

REGENERATING ELECTRIC BATTERIES.

An improved method of regenerating the energy of electric batteries, the elements whereof are rendered fit for renewed action by passing through the same an electric current whose direction is opposite to that of the current produced when the said batteries are in operation has been invented by Mr. LOUIS MINCHE, of Paris, the invention being especially applicable to batteries in which natural or agglomerated peroxide of manganese is used, with or without a porous vessel, immersed with the zinc in a solution of hydrochlorate of ammonia or some other exciting liquid; but it is obvious that the said invention is applicable to all batteries capable of being regenerated by the method above indicated.

Describing the operations as applied to a battery of (say) 20 elements, consisting of zinc plates and plates of agglomerated peroxide of manganese, the invention is thus carried into practice. When this battery is caused to operate the zinc is oxidised and dissolved in the hydrochlorate of ammonia, and the peroxide of manganese is deoxidised, or passes into a state of diminished oxidation. After a few hours' working the battery has lost a part of its energy, and to restore this lost energy to the same he causes the current from another battery or from any generator of electricity to pass through the battery to be regenerated in a direction opposite to that of the current generated by the latter, this having the effect of reducing the dissolved zinc to the metallic state, and of re-oxidising the peroxide of manganese to the degree of oxidation possessed thereby at first. For reconstituting or regenerating the elements of the main battery he uses preferably a thermo-electric battery, but he may use a magneto-electric machine or any other source of electricity. If the principal battery is arranged for tension currents the battery which is to reconstitute its elements will be arranged in like manner, but he may use a commutator, by means of which the elements of the principal battery may be connected for "quantity" during the time in which the regenerating battery acts. This arrangement allows of a great number of elements being reconstituted by means of a relatively feeble battery, as is practised in regard to the batteries termed secondary-current batteries. When the principal battery has attained its maximum power it will only be requisite to turn the commutator to re-establish the original order.

This method of regeneration or restoration of energy can be applied to batteries whose positive plate is not surrounded by a depolarising liquid, and whose depolarisation is spontaneous; for instance, platinated plates of carbon or analogous plates. It may also serve

to regenerate batteries, the depolarising body whereof is an oxidising body, such as bichromate of potash, permanganate of potash, perchloride of iron, bichloride of tin, and analogous materials.

NEW APPLICATION OF ASBESTOS.

So many enquiries have recently been made as to the value and uses of asbestos that it will give general satisfaction to learn that Mr. EGDMOND J. ERICHSEN, of Copenhagen, has now perfected an invention, according to which pulverised asbestos in a raw state or otherwise is so combined with various silicious solutions and with metallic or other colours or pigments, and according to requirements with plaster of Paris, chalk, lime, clay, sand, or other loading materials or compositions, as to produce new material or materials or compositions which partake of the nature of stone or enamel, being hard, dense, resisting oxidation, and heat, cold, and damp.

The invention is of course capable of modification within certain limits, but it may be stated that as an example of a paint or enamel which the inventor calls "the imperial," 50 parts of silicious solution of 25 to 50° Baumé may be combined with 20 to 30 parts of pulverised asbestos, 10 to 20 parts of metallic oxides, and 50 to 60 parts of chalk or other such material. As another example of "imperial" paint may be named 50 parts of silicates (from potash or alkalis) in solution of 25 to 50° Baumé, 20 of asbestos powder, and 30 of zinc, iron, lead or other metal colours, alkaline earths, magnesia, barytes, or their acid combinations, chalk, lime, and earth colours. Applied as a paint it forms a fireproof enamel, resisting the influence of oxidation of iron coated therewith and the influence of white heat; for porous fireproof materials it serves to give a glassy surface, stopping the pores. It is applicable as a coating for building materials, such as stone, newly faced or decaying or decayed, ornamented or plain, and cement castings and concrete, also for wood, for gas and water pipes inside and outside, for roofing felts and asphalt roofing materials, for roofing of iron and other metals for the inside and outside of wooden and iron ships, and for brick-work to resist damp and atmospheric influences.

It is further suggested that the material is specially applicable to the protecting of the inside and outside parts of steam-boilers exposed to the injurious effects of fire and air. The iron surface to be coated with the paint must be first well cleaned. To do this, take in proportion one gallon of pure water and 1-10th gallon of sulphuric acid 65° Baumé, and mix them well together, and with a mop rub the metal surface well forwards and backwards to remove the rust or greasy matters, or place the parts to be coated in a vessel or reservoir for some hours (say 12) in the above named solution. When the solution has properly entered the pores, wash the metal surfaces over with clean cold water and leave them to dry; then coat with the paint, and rub it with a hard painter's brush into the pores of the metals, so that there is no point left untouched. The paint dries up in 5 to 20 minutes, and is hard, and day after day increases in strength. It combines with or adheres firmly to the iron and other metal surfaces, and it will prevent corrosion. As a coating or paint for brickwork and woodwork, it consists of silicate of potash, zinc oxide, chalk, and powdered asbestos, and resembles the old fresco from Pompeii, and to this is added any kind of dry colours. It is worked out with an iron trowel or wood plate covered with felt, and made into a thinner or thicker coat as desired, and with a quite smooth surface, and never requires to be painted with lime colours, or oil colours, or composition colours, and can be cleansed with brushes with soap and hot water. For coating brickwork and woodwork the proportions most suitable appear to be—powdered asbestos fibre 20 parts, with 20 to 30 parts of silicious solution of 25° to 30° Baumé; 10 to 15 parts of oxide of zinc; and 50 parts of chalk and pure earth colours. It dries quickly, becomes hard as stone, and is like the old Pompeii stucco.

Brick walls and wood articles to be coated with the new material must first be cleaned with water and soap, and then be rubbed in with a thin solution of silicate of potash 10° Baumé, so that it enters the pores. This impregnation should be done twice, with an hour between, but not in frosty weather, before the walls, bricks, and wood articles are painted with the paint, which may be called "fresco." White walls and ceilings may be covered with paper, which is then coated with the paint. For this may be used sulphate of baryta or zinc white mixed with pulverised asbestos and various silicate solutions of suitable strength. The walls and ceilings so covered and coated can be washed with water whenever required to be cleaned. Compositions which may be taken as examples are 20 per cent. of powdered asbestos fibre, 30 to 50 of sulphate of baryta, and remainder silicate of potash of 25° Baumé; also 20 parts asbestos, 20 to 30 zinc white, 10 chalk, and 40 to 50 silicate of potash of 25°. In either case pure earth colours are to be added as required. As a moulding composition or artificial stone it may be used for numerous articles by suitably proportioning the amount of stoney or clayey materials therein, such as clay, sand, burnt clay. The articles may be formed or moulded solid or hollow, and by hand, or steam or hydraulic pressure; they are afterwards heated, and will then have a great hardness. Half of the imperial and half of the clay or sand is a suitable proportion for many purposes, but in some cases this composition is used only as a thick outer layer, while the inside of the block or parts consists of clay or other cheap materials.

For coating boilers externally for preventing radiation of heat a composition is made of parts of asbestos fibre and parts of silicate solution of 25° Baumé. It is made as a thick dough, and if put directly on the boiler in a layer about $\frac{1}{2}$ in. thick it will harden quickly. It is preferable, however, to make a framework to suit the shape of the boiler surfaces of hoop iron (say) about $\frac{3}{4}$ or 1 in. wide, and with 2 to 4 in. square open spaces between, and having pegs standing out about $\frac{3}{4}$ or 1 in. On the outside of this framework is laid a layer, about $\frac{1}{2}$ in. thick, of the dough, and on this again a layer about $\frac{3}{4}$ or 1 in. thick of a mixture of "imperial" with about an equal proportion by weight of pulverised ground fire-bricks. The framework having the aforesaid coating may be removed from the boiler whole whenever desired for examining or repairing, without (as is generally the case with boiler compositions for preventing radiation of heat) breaking the coating to pieces. The coating may be painted over, even externally, with a thin coat of the imperial paint. It will be observed that the great recommendation of the invention is that non-fibrous asbestos, which has hitherto been comparatively unmarketable, will acquire a permanent commercial value.

COATING METALS WITH TIN.—The desirability of coating lead pipes with tin when they are to be used for the conveyance of water has several times been noticed in the *Mining Journal*, and it is believed that this will be greatly facilitated by the adoption of the invention of Mr. A. Gutensohn, of Southampton Buildings, who proposes first to make a solution of chloride of tin, either saturated or of as great strength as conveniently possible, and free from acid. He then makes a hot solution of pyrophosphate of soda of such strength that crystals of the salt separate if the solution be allowed to cool, and adds the last described solution of chloride of tin, phosphate of tin being precipitated. He collects the sediment of phosphate of tin thus precipitated, and dissolves it in an alkaline solution, preferably caustic soda, to which about 1 per cent. of liquid ammonia has been added. The solution thus obtained is placed in a bath or other suitable vessel, and the lead or other metal to be coated with tin is plunged into it or passed through it, the deposit of the tin being effected by a current of electricity generated in any of the ordinary well-known methods, the positive pole from such generating apparatus being connected with fragments or sheets of metallic tin suspended in the bath or vessel already described, whilst the negative pole is connected with the lead or other metal which is to be coated. The strength of the solution in the bath or vessel may be varied inversely according to the strength of the electric current, the solution being more diluted as the current of electricity is stronger. In order that the cost of tin produced by the novel process described may be as pure as possible, the chloride of tin used as first described should be entirely free from iron. After the bath has been prepared as described, I sometimes add to it a small proportion of a solution of pure chloride of tin, by which

the solution is made to contain a somewhat larger proportion of tin. As the deposit of tin by means of electricity in the way described can be made considerably thinner than tin applied to the surface of metal in the usual way by rolling, considerable economy is effected in the cost of the tin, as well as in the cost of repeatedly rolling in the ordinary way.

Original Correspondence.

THE MYSORE REEFS GOLD MINING COMPANY.

SIR,—Referring to the paragraph which appeared in last week's Journal relative to this company, I am to inform you that Messrs. Southgate and Wilson have resigned their seats at this board. Mr. Anderson has been appointed a director in the place of Mr. Southgate. He is an original subscriber for and now holds 17,000 of the company's shares. The directors hope to announce in a few days that another shareholder holding a very large stake in the company has joined the directors in the place of Mr. Henry Wilson. Messrs. Southgate and Wilson each hold 100 shares in the company. In consequence of these changes the board have been able to reorganise their London management, and effect a present saving to the company at the rate of not less than 1250*l.* per annum.

London, Dec. 23. P. A. EAGLE, Secretary.

GREAT SOUTHERN MYSORE GOLD MINING COMPANY.

SIR,—In reference to the paragraph in last week's Journal, in which it is stated that Mr. Charles F. Bray had resigned his position as manager of this company's property in India, I am instructed by the board to inform you that this is not the fact, as Mr. Charles F. Bray was summarily dismissed.

London, Dec. 21. ERNEST H. GOULD, Secretary.

FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, Dec. 22: Produce 12 days, 1st division of December, 10,000 o*z.*, value, 3875*l.*; yield, 4*6* o*z.* per ton; profit for the month of November, 3900*l.*

LA PLATA.—For the week ending Dec. 4 the value of consignments is equal to 5676*l.*

ALMADA AND TIRITO CONSOLIDATED SILVER.—Telegram from Mr. Clemes, Dec. 2: We have remitted you \$5000.—Dec. 5: Cut the lode in ore at the cross-cut Mina Grande: 40 o*z.* per ton of 2000 lbs.

QUARTZ HILL CONSOLIDATED GOLD.—Telegram received from the company's confidential agent: Central City, Colorado, Dec. 20, 75 o*z.* gold (Troy) in 1410 this week.

POTOSI GOLD.—Telegram received Dec. 19: Recommended crushing on the 7th inst.

PITANGUI GOLD.—T. S. Treloar, Pitangui, Nov. 13: The only produce obtained for the month of October was from scrapings in the wash-house, 26*4* o*z.* of gold, which, valued at 8*6*d. per o*z.*, equals the sum of 11*l.* 4*s.* 5*d.* The estimated costs for the same month, at Exchange 22½*d.* (there being no capital expenditure during the month) amounted to 815*l.* 16*s.* 5*d.*; leaving an estimated loss for the month of 824*l.* 12*s.*

NEW QUEBRADA.—Month of October: Dispatched to the coast for shipment—Regulus from smelting-works, 386 tons, 21*85* per cent. dry; ore from the mines, 2815 tons, 10*63* per cent. dry; total, 2851 tons. Forwarded from mines to smelting-works, 1102 tons, 5*94* per cent. dry. Home arrivals, 3162 tons; sales of ore, 1532 tons (average price per unit, 12*s.* 3*d.*); quantity afloat on Oct. 31, 4321 tons; stock at the mines on Oct. 31, 2090 tons; stock of ore and regulus on wharf at Tucacas on Oct. 31, 3230 tons.

GOLD HILL.—Capt. W. Treloar reports that they have commenced collaring up Miller's whim-shaft: this is about 225 ft. eastward of Bernhard's shaft, and here three sets of oak timber have been put in, lathed, and secured for the purpose. From this shaft we intend to drive on the lode at the horizon of 50 ft., to open a communication with the sink, in course of sinking between the said two shafts, which is now down 33 ft., and which promises to open out a good piece of stopping ground.

—Mr. W. H. Bullock reports: We are clearing up an old shaft, which is 166 ft. south-west of engine-shaft, and have a communication to our 163 ft. level; this will lay open a splendid piece of ground for stopping. Reservoir veins are still producing good quality ore, and the two veins are coming together as we are going down. Miller's vein has improved since I last reported to you.—Miller's Whim-Shaft: We are putting in new timber around the collar, and shall soon get this shaft ready for the whim to haul the ore. All other work progressing, and I have every faith that Gold Hill will be a success.

EBERHARDT.—F. Drake, Dec. 3: I beg to hand you my statement of progress for the five weeks ending this date, and will here state that the 2000 ft. workings have been looking better the past week than at any time previous. At both points of the driving we have quartz and some ore. I will endeavour to give you a fuller account of this work in my monthly summary, which I propose to forward shortly. The 6000 ft. drift east (new drift): Run for week ending Nov. 19 15 ft.; run for week ending Nov. 26 34 ft.; run for week ending Dec. 3 38 ft.; total distance, 87 ft. The 6000 ft. drift west: Run for week ending Nov. 5 14 ft.; total distance, 507 ft. The 2000 ft. drift upper level easterly: Run for week ending Nov. 5 9 ft.; run for week ending Nov. 12 20 ft.; run for week ending Nov. 26 4 ft.; total distance, 93 ft. The 2000 ft. drift upper level southerly: Run for week ending Nov. 19 7 ft.; run for week ending Nov. 26 15 ft.; run for week ending Dec. 3 12 ft.; total distance, 34 ft. The 2000 ft. drift upper level westerly: Run for week ending Nov. 5 6 ft.; run for week ending Nov. 12 14 ft.; run for week ending Nov. 19 5 ft.; total distance, 65 ft. The 2000 ft. drift upper level cross-cut: Run for week ending Nov. 26 5 ft.; run for week ending Dec. 3 5 ft.; total distance, 10 ft.

YUBA.—A telegram has been received announcing that washing has commenced.

VIRNEBERG.—R. R. Roskilly, Dec. 20: Hadley Engine-shaft: We are not as yet through the lode in the winze below the 140 metre level south, and it is with much pleasure I am able to state that the lode continues to look well. The forebush is still in copper ore, and for the distance opened it will yield fully 6 tons of that mineral per fathom—a splendid course of ore. All effort is being brought to bear upon this point in order to reach the hanging-wall, also with a view to resume the sinking of the winze, by which a large section of ore ground will be made available. We have no other change throughout the mine calling for remark.

LAST CHANCE.—Dec. 22: Telegram from the agent at Salt Lake—We have during last week sunk 23 ft. in Shaft No. 1. Opulent Mine.

ISABELLE (GOLD AND SILVER).—Mr. Lewis Chalmers, Nov. 23: The weather is moderating; but I could not get teams to contract for hauling at this season under \$4 per ton. In summer and fall ore can be hauled for \$3, and if I succeed in making the showing, which I am confident I shall do, I shall ask for permission to build, and increase our output to 40 tons per day, which, with power mills and hoisting works, the mine can easily supply.

Telegram received in London on Thursday from the manager: Mine looking splendid. Mill running nicely.

KAPANGA.—J. Thomas, Nov. 5: For the past month ending the 12th ult. the 70 cross-cut has been further driven east 29 ft., at the late contract price of 3*l.* per foot; the length now driven is 98 ft. from the shaft. The end continues in the same class of hard elvan country as reported last month, which we anticipated to meet at this point, and I do not think a softer change of stone will be seen until the lode is reached. Notwithstanding the difficult nature of this belt of elvan for working I am pleased to say the men continue to make excellent progress in driving ahead, and hope by the end of December to report we are on the lode; this end being in dead country there is nothing in particular to remark thereon. The 50 cross-cut has again been further driven 20 ft., entirely through Scotty's lode, the total length of the cross-cut being 166 ft. east from the old lode. Scotty's lode was cut at a distance of 146 ft. from the old lode; in cutting through it for the last 20 ft. it was found lying nearly horizontal for that distance, when it changed to the usual underlie of 45° westerly. During the time it continued so flat it proved disordered, and split into branches of quartz, intermixed with killas and country, and no gold to value seen after driving 5 or 6 ft. ahead from where the first magnificent specimens were obtained in cutting into the lode. As it now assumes a defined character, I have commenced to drive north of the cross-cut, and have driven 15 ft., where it is seen regular and compact, averaging 18 in. wide, consisting of a very kindly description of quartz and flookan, which contains quantities of fine black muddle, the usual indications for meeting strong goldstone at any moment. The preliminary work of cutting and securing a plat at the junction, with laying down rails for the proper convenience of making good progress, has been completed during the month, which had to be done before the lode could be opened on north and south of the cross-cut. Everything is going on speedily and steadily underground and at surface, and the prospects are very encouraging. The machinery in all departments continues in good order, causing no delays to check our present good progress.

DON PEDRO.—Mine captain's letter, dated Nov. 24: Drainage: Water at present 9 ft. below eastern of jack-head. Two joints failed in jack-head, and were at once made new; idle one hour for same, and three hours to change bucket and door valve of same lift. Three linings changed, one roll, &c. Machinery in mine in good order.—New Machinery, &c.: A large amount of stone raised, debris removed, pipes and launders of present machinery altered to facilitate progress. Timber and iron required for the job ordered and expected daily.—Adit Level: Four sets renewed and three sets of laths changed.—Bryant's Level: Repairs well advanced.—Explorations: The branches continue much the same, though hunchy. A temporary roof erected for shelter in washing samples, &c. Ore derived so far is fully up to standard.—Reduction: Launders in hand. Old ones decayed and fallen down.

PLACERVILLE.—The mine is looking well. Mr. W. A. Jones, for several years underground foreman of the Eureka Consolidated, at Eureka, has been appointed superintendent.

RICHMOND CONSOLIDATED.—The following cablegram was received this morning (Dec. 20) from the mine at Eureka, Nevada:—Week's run \$36,000, from 91 tons ore; refinery, \$34,000.

—N. Westcott, Nov. 30: The following is the account of the work done in the above mine for the past week. The north-east drift on the 200 level has been run 10 ft. in limestone. The west drift in this level from shaft has been run 14 ft. in the same material; ground hard. The rise from south drift near shaft has been extended 4 ft. (starting from the 200 level). The 300 north drift has been run 300 ft. in limestone along fissure; favourable ground for ore. The 400 north drift from 11 chamber has been run 14 ft. in limestone. The 500 west drift, from bottom of 15 chamber has been run 5 ft. in ledge matter, some ore. The 500 south 20° west drift, from bottom of 15 chamber, has been run 34 ft. in ledge matter, some ore. The 600 east drift from cave has been run 19 ft. along

fissure in ledge matter, some ore. The east drift from bottom of 50 ft. winze (new find) has been run 3 ft. in limestone. A drift has been run south from the above drift 4 ft. in ledge matter, and there has also been a drift run north 6 ft., mostly limestone, from above drift. The 600 rise, near 14 chute, has been extended 7 ft. in ledge matter, some ore. The 600 rise, 62 ft. east from fissure drift (600 level), has been extended 8 ft. in ledge matter. The 700 drift from winze, under 13 chute, has been run 6 ft. north in limestone; some cross-cutting was done in this drift in red limestone, but nothing found. The 1200 north drift from shaft has been run 54 ft. in quartzite, very soft and fine, no appearance of limestone. The south drift on this level has been run 9 ft. in hard quartzite; this is being used at the furnace for flux.

CANADIAN COPPER.—Francis Bennetts, Dec. 8: Although there are no new features of importance disclosed by the past week's workings in the mines, the extension of the drift, &c., has shown a continuance of veins of similar nature to what had already been passed through, and has in the case of the Hartford Mine in particular added to the reserves of ore laid open. The Capleton Smelting Works are doing good work, and up to date have produced regulus in excess of quantity to that of the same number of days working since we commenced to smelt, and we shall endeavour to give you a satisfactory result for this month's working.

CHEAP AND SIMPLE PUMP.

To form pumps in such a manner that the cylinders and pistons do not require boring and turning, as has heretofore been necessary, a ring of india rubber is, according to the invention of Mr. HAZELLE, of Paris, stretched upon the piston of the pump, thereby forming a rolling piston or packing, the friction of which is very trifling. When motion is imparted to the piston of the pump the packing rolls to and fro, forming a close packing. Flanges are arranged at each end of the piston to prevent the ring coming off. Pumps may thus be made at a very cheap rate, and may be constructed as single, double, or triple action. The same arrangement is equally applicable to pumping and forcing air or gaseous fluids, and may be worked horizontally or vertically, as may be desired. In some cases apparatus is constructed similar to a gasometer and water holder, with inlet and outlet valves, using an india rubber ring on the inverted bell or gasometer as a rolling packet between the bell and the water holder, which prevents the water from being forced out of the water holder, when a rapid up and down motion is imparted to the inverted bell. Flanges are fixed to the bell to prevent the ring from coming off. One or more of these bells can be worked connected together if desired.

In many cases it is preferred to use air vessels when pumping and forcing liquids, and also when pumping air or gas under pressure it is preferred to use an air receiver to regulate the flow, and when necessary safety and regulating valves are also used. Various methods may be used for giving motion to the pumps or apparatus, either by direct acting engines or otherwise, or they may be worked by hand-power. The apparatus will be found of great advantage for ventilation of all kinds, also to produce a blast to be employed in the melting of metals, and for blowing smiths' fires, as well as for a great many other purposes whatever currents of air require to be exhausted or forced. Various modifications may be made in detail in carrying out the invention, according to the purposes for which the same is required to be used. When telescopic tubes or pipes are required to be used in connection with the aforesaid apparatus, it is preferred to use with such tubes or pipes an india-rubber ring or rolling packing to form the joint between the tubes, similar to the rolling piston above described.

MANUFACTURE OF TIN AND TERNE PLATES.

In the manufacture of tin and terne plates, as ordinarily conducted, the plates to be coated with tin or terne metal, after being pickled and annealed and washed, are placed in water to await the coating operation. When the plates are to be coated they are removed from the water and plunged into cold palm oil or grease, from which they are removed and plunged into a bath of molten tin or terne metal. They are then withdrawn and brushed to remove the surplus metal, and are plunged into another bath of molten tin or terne metal, and withdrawn and passed between rollers and cleaned. With a view to simplify this process, and to economise the materials used, Mr. D. Leyshon, of Penclawdd, proposes to cover the water in which the plates are immersed with a layer of oil, or in using a solution of carbonate of soda or other suitable alkaline salt instead of water, the said solution being covered with a layer of oil or used alone, and in the use of a bath of hot grease instead of the cold grease, and in the use of one bath of molten metal instead of two such baths, and in dispensing with the brushing of the plates, the second bath of metal and the said brushing being rendered unnecessary by the use of the hot grease.

In carrying out his invention he places the plates after they have been washed into the said solution of soda or other alkaline salt, or into the bath of water if the solution of the alkaline salt be not used, and on removing them therefrom he places them in a rack, and allow them to stand until the greater part of the moisture has drained off. He then places the plates in the bath of hot grease, and remove them and place them in the bath of molten tin or terne metal. When the plates have remained a sufficient length of time in this bath he removes them, and finish the manufacture by passing them between rollers and cleaning them as usual.

The use of the solution of soda or other alkaline salt in which the plates are immersed, and the layer of oil on the surface of the solution or on the surface of the water, may be dispensed with, and water alone may be used, as usual, if the plates be thoroughly drained after removing them therefrom, and before placing them in the hot grease.

PNEUMATIC SIGNALLING TO MINES.—There is probably no more reliable system of signalling in mines than the pneumatic, and the improvement invented by Mr. JAMES NEWTON, of Clerkenwell, will render its application still more desirable. The bellows is connected by a jointed link with the end of a rod, which slides through a glass guide, and is attached at its outer end to an air bag or bellows. The latter is connected by a tube with the apartment whence the bell is to be rung, and is inflated by means of the usual press button, or other appliance acting on an air bag at the other end of the tube. This tube is provided with an air valve of peculiar construction to permit the immediate escape of the air pressure from the bellows after it has acted therein. This valve consists of a cupped disc or plug working up and down in a cylindrical case, communicating with the tube above and below the valve. The valve is provided with a central thoroughfare and tubular neck, which when the valve is raised by the air pressure beneath it shuts off an air escape hole at the side of the valve case, but uncovers it so as to permit the free escape of the air bag or bellows, when the valve is caused to fall by the pressure of air behind it produced by the return spring on the balance lever collapsing the air bag or bellows. In the case of a gong the hammer would be carried by the spindle in the place of the bell, and the gong would be a fixture.

HYDRAULIC CAPS FOR WINDING SHAFTS.—The improvements invented by Messrs. Frantz and Westmeyer, of St. Johann, on the Saar, Germany, relate to the cap, stage, or platform lifts of shafts of mines, and consist in the application of two or more double levers worked by hydraulic rams, and serving as supports for the frame carrying the cap, said levers being placed in position by the weight of the cap frame in such a manner as to allow the frame to pass and said levers to return automatically to their former position by hydraulic pressure, the whole being intended as an automatic safety apparatus for holding the cap at any desired level when the skips, wagons, or materials thereon may be readily transferred. The hydraulic arrangement consists preferably of four rams connected by pipes, the piston or head of each ram is provided with a double lever, the fulcrum of which is in the piston, said lever turning on a bolt or nut. One end of the lever is secured by a pin, the other supports the cap frame. The rams are raised by water passing through the pipes from an accumulator.

The Stock Exchange committee have appointed Wednesday a special settling day in the shares of the Quartz Hill Gold Mining Company (Limited).

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MINER "E L C A L L A O," GUAYANA, VENEZUELA COUPONS OF SHARES..... 322 Gold in bars produced in the month of October, 1881, and remitted to Messrs. Baring Brothers and Co., London, 7314 37-100 o*z.* DIVIDEND distributed for each coupon, \$200. (Signed) A. J. CAGNINACCI, Vice-President. (Signed) VICTOR J. GRILLET, Treasurer.

LA PLATA MINING AND SMELTING COMPANY.—The Board of Directors have DECLARED the usual MONTHLY DIVIDEND of \$15,000, or SEVEN AND A HALF CENTS PER SHARE, out of the profits for the month of November, PAYABLE ON MONDAY, January 2, leaving at credit of Reserve Fund, \$64,504. F. ANDREWS, London Registrar.

PENNINGTON AND CO., SWORN BROKERS, 7, MOORGATE STREET, LONDON, E.C. Transact business in every description of Stocks and Shares. ESTABLISHED 1869.—BANKERS: ALLIANCE. TREVINCE CONSOLS.—These shares should be bought at once. Full particulars on application.

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M. R. G. E. O. L. E. E., CONSULTING MINING ENGINEER, NORTH ORMESBY, MIDDLESBOROUGH.

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M. R. W. B. COBB, STOCK AND SHARE DEALER, 29, BISHOPSGATE STREET, LONDON, E.C. Corporation of South Australian Copper Mines, and Columbian Hydraulic Shares, should be bought at once. A few copies left of December Circular.

M. R. W. TREGELLAS, 40, BISHOPSGATE STREET WITHIN, E.C. Deals in all descriptions of STOCKS and SHARES at close market prices. He strongly recommends the immediate purchase of GOLD HILL Mine Shares and BRAZILIAN GOLD Mine Shares, which are safe to have a great rise. Full information on application personally or by letter.

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This time last year the price of—
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It is estimated in a Western paper that the rise in value of eight Cornish tin Mines during the last year amounted to no less a sum than £960,100.

AVERAGE PRICE OF COMMON ENGLISH (BLOOM) TIN:—
1878. 1879. 1880.
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Capital £50,000, in 50,000 Shares of £1 each.

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PRACTICAL HYPSONOMETRY: A Method of DETERMINING ALTITUDES (Heights of Mountains and Depths of Mines) accurately and almost instantaneously, with the Aneroid Barometer, WITHOUT TABLES.
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IN LIQUIDATION.

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MESSRS. DAVIS AND BROTHERHOOD WILL SELL, BY AUCTION, at the New Inn Hotel, Gloucester, on Wednesday, the 11th of January, 1882, at Three o'clock in the afternoon (subject to such conditions of sale as will be then and there produced, and which may be seen at the undermentioned Solicitors' offices 14 days before the day of sale).—
ALL THAT THE PRINCIPAL SUM OF £12,500 secured to the said WILLIAM FOWLER by an Indenture of Mortgage, dated the 11th of June, 1877, with interest at 4 per cent. from the date thereof, upon certain GALE, TRACTS, or ALLOTMENTS OF COAL, HEREDITAMENTS, and PREMISES, situate in the Forest of Dean, Gloucestershire.

For further particulars, apply to the Auctioneers, Chepstow; A. C. CHAMPNEY, Esq., Solicitor, College Court, Gloucester; or to—
Messrs. LEVETT and CHAMPNEY, Solicitors, Hull.

TO MINE SPECULATORS, AGENTS, AND OTHERS.

MESSRS. SPEAR AND PALMER are favoured with instructions to SELL, BY AUCTION, on Tuesday, the 3rd day of January, 1882, on the premises, at TREBEIGH CONSOLS MINE, in the parish of St. Ive, East Cornwall, on such conditions as will be then read, in One Lot, as a going concern, all the undermentioned excellent

MINE MACHINERY AND MATERIALS,

Together with the LEASE of the VALUABLE SETT, the property of the shareholders, viz:—

PUMPING ENGINE, 40 inch cylinder, 10 ton BOILER, spanners and other requisites; one single and one double purchase winch, as good as new; one 12 in. cylinder ROTARY CONDENSING ENGINE, with drawing cage, capstan, signal bell, and miniature attached, with 58 feet of 5 in. steam pipe connected, and a large BOILER; about 8 tons steam coals, whim, 2½ steel wire ropes, puppet head and pulleys complete; about 40 fathoms ½ in. whim chain, 2 kibbles, about 34 fms. bridge rail, turnabout tram wagon, capstan rope, lashings and biveles, shears 10 fms. high, with pulleys complete, 15 fms. 12 in. launders, one 10 ft. 9 in. whim bore, one 6 ft. 10½ in. whim bore, one 11 ft. 10½ in. working, 10 in. door and piece, large bishop heads, two large saddles and brackets for balance bob complete, 14 in. turn water pipe 15 in. long, 16 fms. 2 in. bucket rods, 18 fms. of 2½ in. strapping plates, gudgeon, large screw stock, grinding stone and stock, large beam and scales; 6½ cwt. and 6 small weights, patent smiths' bellows, forge horse, about 4 cwt. smiths' tools, 3 cwt. steel borers, vice, anvil nearly new, picks and sledges, three 12 in. bucket prangs, hoops and valves complete, one 12 in. seating, 2 cwt. various chain, about 1 cwt. rod pins, 2 cwt. 2 qrs. large staple and useful iron, three water barrels, screw tackle, 3 cwt. 2 qrs. new square iron, 3 cwt. 2 qrs. new round ditto, 3 cwt. ditto flat ditto, carpenter and smiths' shop (wood) 40 ft. by 10 ft. high, count-house 14 ft. 6 in. by 15 ft., material house ditto 14 ft. by 12 ft., powder house ditto 8 ft. square, w.c. 4 ft. 6 in. square (all wood), five augers and adze, 1 cwt. new lashings, 3 qrs. 10 lbs. brass bearings, whim, engine house 25 ft. by 12 ft., launder from ditto to pond 96 ft. by 20 ft. of Swede timber, about 60 fms. 3 in. round capstan wire rope, one 34 ft. 12 in. plunger with 14 in. bottom and pipes, one 16 ft. 12 in. drawing lift with 14 in. pipes, 35 fms. 9 in. square wood rods with bolts and plates complete, 45 fms. of ladders, 45 fathoms of dividing timber, mostly removable, count-house requisites, &c.

All particulars can be had of Mr. T. B. LAWS, 2, Church-court, Clement's-lane, London; or of the Auctioneers.

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Particulars, with plan, &c., can be had.
Apply, "M. E. C.," MINING JOURNAL OFFICE, 26, Fleet-street, London, E.C.

IN LIQUIDATION.

WHEEL COATES UNITED TIN MINES. (LIMITED).

TO BE SOLD, BY PUBLIC TENDER, the following IMPORTANT GRANTS held of the Duchy of Cornwall, viz:—
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Also the following valuable PLANT, MACHINERY, and EFFECTS:—One 36-in. Pumping-Engine, one 24-in. Stamping-Engine, one 18-in. Winding-Engine, 105 fms. of pitwork, 32 heads of stamps, dressing-floors in good order, carpenter's shop, smith's shop, burning house, &c. The tools and implements used in carrying on operations on the premises.

The mine is in thorough working order, and tin producing.

Forms of Tender may be obtained of the Liquidators, Messrs. WILLIAM BATTYE and EDWARD TOMES, at the office of the Wheel Coates United Tin Mines (Limited) in Liquidation, No. 16, Great Winchester-street, London, E.C., and all Tenders must be delivered sealed, addressed to the Liquidators, at the above-mentioned offices, on or before the 30th day of December, 1881.

TO CAPITALISTS AND OTHERS.

VALUABLE AND EXTENSIVE LEAD MINING PROPERTY FOR SALE.

TO BE SOLD, BY TENDER, AS A GOING CONCERN, the EXTENSIVE and CELEBRATED LEASEHOLD MINERAL PROPERTY lately worked by the Pateley Bridge Company (Limited), together with the EXTENSIVE SMELTING-WORKS, commodious cottage, and the WHOLE of the LARGE and COSTLY PLANT, MACHINERY, STOCK, and EFFECTS upon the premises. The property is situated near Pateley Bridge, in the county of York, within an easy distance of a railway station, and close to a good market for the produce. It comprises the mineral rights over an area of about 1300 acres of highly mineralised land, the sett being traversed by not less than 26 known veins, many of them almost entirely unworked, and nearly all of which have been productive to water level. The smelting-works are in full working order, and the entire premises are held at low royalties and no dead rent. The plant and materials include STEAM ENGINES, several miles of well-laid tram-road in the levels, pumping and other machinery, together with the stock, materials, plant, and tenants' fixtures—the whole forming a most eligible opportunity for the investment of capital, and believed to require only the expenditure of a small outlay on additional machinery to reinstate the premises, which were conducted for so many years by the Coalbrookdale and Sunside Mines, with great profit in the position of a successful lead mining property.

All applications to be sent in on or before the 2nd day of January, 1882, addressed to Mr. G. J. BATTES, 76, Old Broad-street, London, E.C., Solicitor, to the Liquidator, of whom full particulars may be obtained.

EAST WHEEL CREBOR.

MINE MACHINERY AND MATERIALS FOR SALE, AT TAVISTOCK.

FOR SALE, BY PRIVATE TENDER, THE FOLLOWING NEARLY NEW VALUABLE MINE PLANT AND MATERIALS, now on the mine, viz:—

ONE 50 H.P. STEAM ENGINE, with drawing gear and capstan attached, recently made for the company by the eminent firm of Holley and Co., of Lincoln, for pumping and winding; 80 fms. of steel wire capstan rope, best quality; 80 fms. steel wire whim rope; a 60 ft. shears, with pulley braces and bearings, complete; a 30 ft. puppet-heads, with pulleys, &c.; 50 fms. 9 in. main rod, bolts, and strapping-plates; a 5 in. house water plunger-lift (8 fms.), with H-piece, dooppiece, and pole complete; about 70 fms. pumps (10 to 12 in.), windrope, dooppiece, and working barrels; 60 fms. of bucket-rods, &c.; crab winch; a quantity of bolts and burrs, pump-rings, &c.; smiths' bellows, vice, smiths' and miners' tools; a lot of useful timber, and the usual office furniture, &c.

Tenders for the whole or any part of the above machinery and materials will be received up to Wednesday, the 4th January, 1882, at Twelve o'clock at noon, and should be addressed to the Purchaser and Committee of East Crebor Mine, 5, Copthall Buildings, Throgmorton-street, London; and the Committee will not be bound to accept the highest or any tender.

Dated December 22nd, 1881.

BEAM ENGINES ON SALE.—
Pair of powerful BEAM CONDENSING STEAM-ENGINES, cylinders 30-in. diam.; stroke 4 ft. 6 in.; fly spar segment wheel, 19 ft. diam.; by 10 in. broad by 3 in. pitch, with eight cast-iron arms; beam 13 ft. 7 in. long by 26 in. across centre connecting rods 13 ft. long; complete with governors, brass tailow cups, and lubricators, in excellent working condition.

INCLUDING
wrought-iron stand rails, standards, fly-wheel, crank and beam races, iron box beam 19 ft. long by 13 in. deep by 7 in. broad, supported by four cast-iron columns each 9 ft. long by 7½ in. massive stone and brick foundation; powerful single-purchase crab gear, supported on cast-iron pillar, so that the crab may be swung round to either of the two engines, acted upon by worm and wheel, size of barrel 28 in. wide by 6 in. diam.
Apply
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ON SALE,—PUMPING ENGINE, inverted cylinder 60 inches diameter, 9 feet stroke, Cornish valves, cataract, wrought-iron main beam and cast-iron balance beam, box and weights. In first-class condition.

ONE PAIR COUPLED HORIZONTAL CONDENSING PUMP-ING ENGINES, cylinders 18½ inches in diameter, and 4 feet stroke. Heavy fly-wheel, 14 ft.; pinion, 4 feet 2 inches; spur, 11 feet 9 inches; pumping crank, wood connecting rods, and two cast-iron L legs.

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WANTED, an EXPERIENCED CAPTAIN, fully qualified to TAKE CHARGE of the MINE and MACHINERY. Will be required to reside near the works.

Applications, with testimonials, to be sent to the Directors on or before Monday, the 10th January, 1882, care of Messrs. WAKEFIELD and ENOCK, 16, Corn Exchange Chambers, Chester.

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THE ADVERTISER, having a first-class SILVER-LEAD MINE in one of the best districts in Cornwall, without sufficient means to develop it, is ANXIOUS TO SELL ONE-HALF or THREE-FOURTHS of the property. A small outlay will in all probability open up a very rich mine.

For particulars, write "Miner," 24, Gilbert-road, Kennington, S.E.

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SECOND-HAND, BUT EQUAL TO NEW:—
STEAM BOILERS.—Three first-class Boilers, 30 ft. by 7 ft., two flues, Galloway tubes in, and fittings, four years old, insured at 75 lbs. pressure. Will be sold cheap.

BOILERS.—Two Boilers, 28 ft. by 7 ft., two flues. Been working at 65 lbs. Price on rails, £130 each.

Other sizes of Boilers in stock, in excellent condition, 28 ft. by 7 ft., 24 ft. by 7 ft., 24 ft. by 6 ft., 20 ft. by 5 ft., 15 ft. by 5 ft., and 12 ft. by 5 ft. Safe for 65 and 80 lbs. pressure. Very cheap.

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WINDING ENGINES and COLLIERY PLANT of every description, second-hand, in stock.

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FOR SALE, a 30 H.P. PORTABLE STEAM ENGINE; with link-motion reversing gear, has drum and gearing complete for winding and pumping.

A 14 H.P. PORTABLE WINDING and PUMPING ENGINE.

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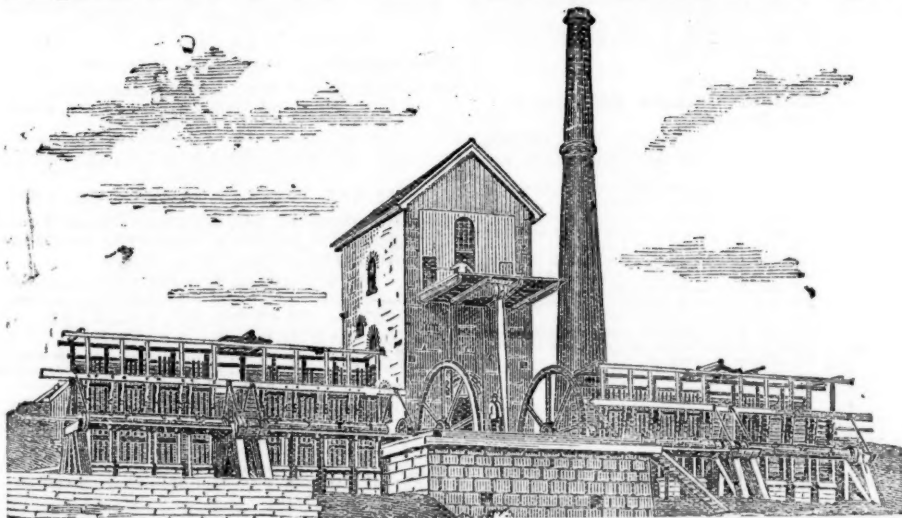
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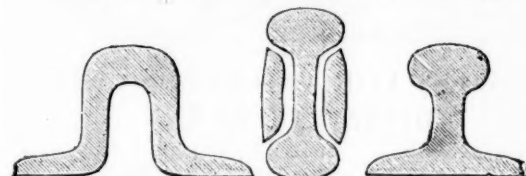
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